
**FACILITATORS AND BARRIERS TO COMMUNICATION PARTNER
INVOLVEMENT IN AUDIOLOGICAL REHABILITATION**

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Abstract

Background

Communication partners play a significant part in encouraging their partners with hearing impairment to seek professional help (Armero, 2001; Carson, 2005; Donaldson, Worrall, & Hickson, 2004; Duijvestijn et al., 2003; Knudsen, Öberg, Nielsen, Naylor, & Kramer, 2010; Mahoney, Stephens, & Cadge, 1996). Little is understood about the facilitators and barriers to communication partner involvement in audiological rehabilitation. There are no known studies on the perceptions communication partners have of the factors affecting their participation in rehabilitation. The aim of this study was to determine the facilitators and barriers to communication partner involvement in audiological rehabilitation of a partner with hearing impairment.

Method

The audiograms of male partners with hearing impairment aged 60-80 years were checked for degree of hearing impairment. If the partner with hearing impairment met the inclusion criteria, his female communication partner aged 60-80 years completed a hearing test. Eight communication partners, who had pure tone air-conduction thresholds of no more than 40 Decibel Hearing Level (dB HL) at any of the frequencies 500 Hertz (Hz), 1000 Hz, 2000 Hz, and 4000 Hz bilaterally, completed an interview. A phenomenological methodology was used to analyse the interview data. Independent checking of accurate transcription, reflexivity (achieved through bracketing), triangulation, reporting direct quotations in results, and member checking were employed to increase credibility.

Results

Six facilitators and nine barriers to communication partner involvement in audiological rehabilitation were found. For some facilitators and barriers, there was strong agreement between the coded interview content and member checking. Social desirability

bias may have impacted the member checking results for facilitators and barriers that violated social norms of how a “good couple” should behave.

Conclusion

The results from this study highlighted the facilitators and barriers to communication partner involvement in audiological rehabilitation. There was a wide variety of facilitators and barriers raised and there was individual variation in the responses of communication partners. I hope that clinicians will be able to use the results of this study to provide patient- and family-centred care to their patients that is appropriate in the context of each patient’s family relationship dynamics.

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Definitions

The phrase hearing impairment will appear throughout this thesis instead of hearing loss. Hearing impairment is consistent with the terminology used in the World Health Organization's International Classification of Functioning, Disability and Health (ICF).

List of Abbreviations

COSI	Client Oriented Scale of Improvement
dB HL	Decibel Hearing Level
GPS	Goal Sharing for Partners Strategy
HHIE	Hearing Handicap Inventory for the Elderly
HHIE-SP	Hearing Handicap Inventory for the Elderly for Use with Spouses
HII-SOP	Hearing Impairment Impact-Significant Other Profile
Hz	Hertz
ICF	International Classification of Functioning, Disability and Health
kHz	kilohertz
SOS-HEAR	Significant Other Scale for Hearing Disability
TCP	Transtheoretical Model of Change
US	United States

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Chapter 1: Introduction

1.1 Introduction to Hearing Impairment

Hearing impairment is a widespread chronic condition in older adults and there are a range of limitations that people encounter due to this health condition (Manchaiah, Stephens, Zhao, & Kramer, 2012). People with hearing impairment may experience reduced quality of life (Chia et al., 2007) and social isolation (Arlinger, 2003). The International Classification of Functioning, Disability and Health (ICF) is a framework to explain the experience of a disability, such as hearing impairment (World Health Organization, 2002).

Hearing impairment can also have debilitating consequences for communication partners (Kelly-Campbell & Plexico, 2012). Communication partners are people who are in regular communication with the person with hearing impairment (Manchaiah, Stephens, & Lunner, 2013). The term communication partner has been developed to describe significant others who can include the spouse, family members, friends, colleagues, and carers (Manchaiah et al., 2013; Stephens & Kramer, 2010).

Historically, the effects on communication partners have often been overlooked (Donaldson et al., 2004). Hearing handicap assessments by a communication partner were used to describe the obstacles encountered by the partner with hearing impairment (Chmiel & Jerger, 1993). More recently, the impact on communication partners has been acknowledged through a concept known as *third-party disability* (World Health Organization, 2001a).

Despite the negative consequences of hearing impairment, many adults delay seeking professional help (Brooks, 1979; Kyle, Jones, & Wood, 1985) and hearing aid adoption rates remain low (Kochkin, 2009). Communication partners may help to increase hearing aid uptake if audiological rehabilitation appropriately includes them (Manchaiah et al., 2012). Some research has been completed on the role of communication partners in audiological rehabilitation (Miller, 1983). However, it is an area that has until recently been ignored and

further research is warranted (Manchaiah et al., 2012). Accordingly, this study aimed to identify the facilitators and barriers to communication partner involvement in audiological rehabilitation.

This Chapter begins with a description of the key components of the auditory system, the types of hearing impairment and the process for auditory diagnostic assessment. It will also discuss the prevalence of hearing impairment, both globally and in New Zealand. I describe the ICF and the third-party disability experienced by communication partners. This Chapter also contains a detailed discussion of the management options for hearing impairment and the role of communication partners in rehabilitation. I describe various research methodologies and explain the reasons for the use of a qualitative research design for this study. The study rationale and research question of this study will emerge from my review of the relevant literature and will be presented at the end of this Chapter.

1.1.1 Auditory structures.

The auditory system includes the ear and the auditory nervous system. Sound is directed by the pinna and travels down the external auditory meatus to the tympanic membrane causing it to vibrate (Moore, 2012). The vibrations are transmitted by the ossicles in the middle ear to the inner ear. After sound travels through the middle ear, there are a variety of interactions in the inner ear that involve the cochlea fluids, membranes, and hair cells in the cochlea (Musiek & Baran, 2007). The inner ear performs two key functions (a) a frequency analysis on sounds (arising from the fact that different frequencies stimulate different parts of the inner ear); and (b) the conversion of mechanical energy into electrical energy by the inner hair cells (Humes & Bess, 2014). The neural representation of sound travels from the cochlea through the ascending auditory pathway to the auditory cortex (Martin & Clark, 2012). Hearing impairment involves the impairment of some or all of these

physiological auditory structures. The type of hearing impairment can be identified by the area or areas of the auditory system that are dysfunctional.

1.1.2 Types of hearing impairment.

There are three different types of peripheral hearing impairment: (a) conductive; (b) sensorineural; and (c) mixed. Conductive hearing impairment is caused by a disorder of the middle ear and generally results in a flat audiometric configuration or hearing impairment predominantly in the low frequencies (Stach, 2010). Sensorineural hearing impairment is caused by a disorder of the cochlear and its neural connections (Moore, 2012). A mixed hearing impairment arises when there are disorders in both the conductive and sensorineural systems (Steiger, 2015).

The rehabilitation options offered to patients can differ depending on the type of hearing impairment. Some middle ear disorders, which often cause conductive hearing impairment, can be treated through surgery. For example, pressure equalisation tubes can be inserted to treat middle ear effusion and cholesteatoma is treated by surgical removal of the cholesteatomatous material (Martin & Clark, 2012). In contrast, there is no medical treatment for some permanent conductive (such as atresia or severe otosclerosis) and all sensorineural hearing impairment. Audiological rehabilitation options for sensorineural hearing impairment include hearing aids, cochlear implants, individual or group rehabilitation, assistive listening devices, or some combination of these strategies (Habanec & Kelly-Campbell, 2015; Humes & Bess, 2014; Sweetow & Palmer, 2005). The inclusion criteria for this study targeted couples affected by permanent conductive or sensorineural hearing impairment so largely focused on nonsurgical rehabilitation options. The different rehabilitation options mean that it is important to accurately diagnose the type of hearing impairment. Audiologists complete an audiological diagnostic assessment to determine the type of hearing impairment.

1.1.3 Assessment of hearing impairment.

The audiological diagnostic assessment is comprised of a case-history and a battery of tests that are cross-checked for consistency (Martin & Clark, 2012). Case-history is important because the symptoms of the hearing impairment and the symptoms progression are critical information required to make a diagnosis (Hickson & Scarinci, 2007). During the case-history, communication partners can assist the person with hearing impairment to respond to the audiologist's questions and expand on information that the person with hearing impairment has provided at the appointment (Ekberg, Meyer, Scarinci, Grenness, & Hickson, 2015). After completing a case-history, the audiologist performs a series of tests designed to determine the hearing status of the patient.

Pure tone air-conduction thresholds assess the integrity of the entire auditory pathway (outer ear, middle ear, cochlea, and VIII nerve) and bone-conduction testing bypasses the outer and middle ears and only assesses the functioning of the cochlea and cranial nerve VIII (Schlauch & Nelson, 2015). Speech testing measures how well people use their hearing to understand speech signals (Stach, 2010). Pure tone audiometry and speech testing are behavioural tests of a person's level of hearing as they require active responses from the person with hearing impairment.

There are also a series of objective tests that an audiologist can use to assess hearing function. Tympanometry is one such tool that is used to determine whether the middle ear system is providing effective transmission of sound (Hunter & Sanford, 2015). Acoustic reflex thresholds can be an indicator of auditory nerve damage and the pattern of ipsilateral and contralateral reflex thresholds across both ears can assist in identifying brainstem lesions (Humes & Bess, 2014). Otoacoustic emissions are a useful indicator of outer hair cell function (Prieve & Fitzgerald, 2015). The combined results of the behavioural and objective

tests are used by the audiologist to diagnose the degree, nature, and configuration of hearing impairment.

There are also a series of subjective assessments of hearing impairment. There are self-report surveys asking people to confirm whether they have a hearing impairment. There are questionnaires, such as the Hearing Handicap Inventory for the Elderly (HHIE), that measure the self-reported level of disability (Ventry & Weinstein, 1982). There are other questionnaires that collect information from a communication partner about the impact of hearing impairment on their partner (Newman & Weinstein, 1988). More recently, researchers have developed questionnaires that measure the level of third-party disability experienced by communication partners (Knussen et al., 2004; Preminger & Meeks, 2012; Scarinci, Worrall, & Hickson, 2009a). These questionnaires that collect information from communication partners are discussed in more detail in Section 1.3.5. Audiological diagnostic assessments are used in the diagnosis of hearing impairment and, when administered across a sample of people, can also be used to estimate the prevalence of hearing impairment.

1.2 Adults with Hearing Impairment

1.2.1 Global prevalence.

Hearing impairment is one of the most common chronic conditions in adults (Danermark et al., 2010). Data on worldwide prevalence is sparse but there are some estimates available. When hearing impairments of greater than 25 Decibel Hearing Level (dB HL) are included, it was estimated that in the year 2005 there were 642 million people worldwide who were affected by permanent hearing impairment (World Health Organization, 2006). Stevens et al. (2011) approximated global hearing impairment prevalence (and 95% uncertainty levels) by reviewing 42 studies, which were conducted between 1973 and 2010 in 29 countries. These researchers estimated that, in 2008, hearing impairment (defined as an

average hearing level of 35 dB HL or more in the better ear) affected 9.8% (7.7– 13.2%) of females over 15 years and 12.2% (9.7–16.2%) of males over 15 years.

Prevalence figures vary worldwide and are dependent on the criteria used to define hearing impairment and the process of data collection. Kochkin (2009) arranged for people to complete a survey and estimated that hearing impairment affected over 34 million Americans. Another study by Agrawal, Platz, and Niparko (2008) investigated the prevalence of hearing impairment in people in the United States (US) aged 20-69 years. These researchers were interested in speech frequency hearing impairment, which was defined as a 25 dB HL or higher hearing impairment at speech frequencies, 0.5, 1, 2, and 4 kilohertz (kHz). The results showed that 16.1% of US adults (29 million Americans) had speech-frequency hearing impairment in 2003-2004. The difference in estimates between the two studies could be caused by the upper age limit in the study by Agrawal et al. (2008). Another possible explanation for the difference in estimates is that the studies used different data collection methods. Agrawal et al. (2008) completed a national cross-sectional survey with audiometric testing. Kochkin (2009)'s study measured self-reported hearing impairment so it is possible that some participants reported incorrectly.

Some studies completed in other countries have also investigated the prevalence of hearing impairment. One Australian study found that 16.6% of South Australians aged 15 years or older had a hearing impairment in their better ear at ≥ 25 dB HL and 22% in the worse ear at the same level (D. H. Wilson et al., 1999). The methodology was a survey to screen for suspected hearing impairment and then audiological testing of participants who reported a hearing impairment and a sample of participants who reported no hearing impairment. A United Kingdom study that measured self-reported hearing impairment through a questionnaire and conducted audiometric testing of a sample of people who completed the questionnaire found that 16% of adults (17-80 years) have a bilateral hearing

impairment of at least 25 dB HL averaged over the frequencies 0.5, 1, 2, and 4 kHz (Davis, 1989). The Australian and United Kingdom studies were completed sometime ago so might somewhat understate current prevalence. An ageing population may mean that there is now an increased level of hearing impairment in these countries.

There is also evidence that the prevalence of hearing impairment is increasing. Kochkin (2009) reported that the population with hearing impairment grew at 160% of the rate of US population growth during the period 1991 to 2008. The research involved self-report measures so there is some risk of under- or over- reporting but the general trend suggests that hearing impairment is on the rise. Research on the global prevalence of hearing impairment indicates that it is a significant health issue. In addition to these international studies, there is also some New Zealand based research.

1.2.2 New Zealand prevalence.

In New Zealand, a population survey performed in connection with the 2001 census reported that the prevalence of hearing impairment was 10.3% (Greville, 2005). More recently, the Disability Survey 2013 carried out by Statistics New Zealand (Tatauranga Aotearoa) found that hearing impairment affected 9% of the population. For the purposes of the survey, an adult was considered to have a hearing impairment if they could not “hear, or have difficulty hearing, what is said in a conversation with one other person and/or what is said in a group conversation with three or more people, even when using an assistive hearing device such as a hearing aid” (Statistics New Zealand, 2013, p. 14). The survey indicated that hearing impairment was more likely in men (12%) than women (9%), equally likely to be experienced by boys and girls (1% of children), and strongly correlated with age. The survey revealed that 34% of men and 23% of women over 65 years experienced hearing impairment. In comparison, for men and women aged 15 to 44 the rates were 5% and 3%, respectively.

Ethnicity-specific prevalence rates are not currently available in New Zealand. However, there is some evidence that Māori and Pacific populations experience greater prevalence of hearing health issues, particularly in paediatric populations (Giles & Asher, 1991; Mahadevan et al., 2012; Paterson et al., 2007; Stanhope, Aitchison, Swindells, & Frankish, 1978). More information about the rate of hearing impairment in Māori and Pacific Island people is required (Bird & O'Beirne, 2015).

It has long been predicted that the prevalence of hearing impairment is likely to rise due to an ageing population. However, until recently, there has been no known research that has examined the repercussions of New Zealand's ageing population on hearing healthcare. In the first known published study, Exeter, Wu, Lee, and Searchfield (2015), used population projections from Statistics New Zealand and published estimates of hearing impairment to predict the effect that an ageing population will have over the next 50 years in New Zealand. These researchers estimated that there were 330,269 people aged 14 years or older with hearing impairment and that this will increase to 449,453 in 2061. There were some limitations to the study as it did not provide estimates based on ethnicity or level of deprivation. It also sourced data from a telephone survey which attracts an element of bias in terms of who decides to respond to the survey. However, the estimates suggest that it is likely that hearing impairment will become more of a concern for health professionals over time (Gilliver & Hickson, 2011). As a result, studies that address issues related to hearing impairment are likely to become progressively more relevant.

This study examined one such issue, the experiences of couples affected by hearing impairment. In particular, it investigated the facilitators and barriers to communication partner involvement in audiological rehabilitation. A helpful point of reference for this study was the ICF which has been used as a framework to explain the effects of hearing impairment

on the spouses of older people with hearing impairment (Scarinci, Worrall, & Hickson, 2009b).

1.3 The ICF and Hearing Impairment

The aim of the ICF is to provide a framework to discuss health information in a common language that can be used around the world (World Health Organization, 2002). The ICF describes functioning in two key parts: (a) functioning and disability; and (b) contextual factors. Functioning and disability is made up of body functions and structures, and activity and participation. The contextual factors are comprised of environmental factors and personal factors. Each of the components of the ICF is described in Table 1.

Table 1. *Components of the ICF as defined in World Health Organization (2001b, p. 12, 23)*

Component	Definition
Body functions	“[T]he physiological functions of body systems (including psychological functions).”
Body structures	“[A]natomical parts of the body such as organs, limbs and their components.”
Activity	“[T]he execution of a task or action by an individual.”
Participation	“[I]nvolvement in a life situation.”
Environmental factors	“[T]he physical, social and attitudinal environment in which people live and conduct their lives.”
Personal factors	The “particular background of an individual’s life and living and comprise features of the individual that are not part of a health condition or health states.”

The interaction between the components of the ICF can be represented diagrammatically as shown in Figure 1 (World Health Organization, 2002). The diagram illustrates that to understand the functioning of people with hearing impairment, it is important to recognise the relationship between a person’s impairments, activities, and participation, as well contextual factors that might increase or decrease disability.

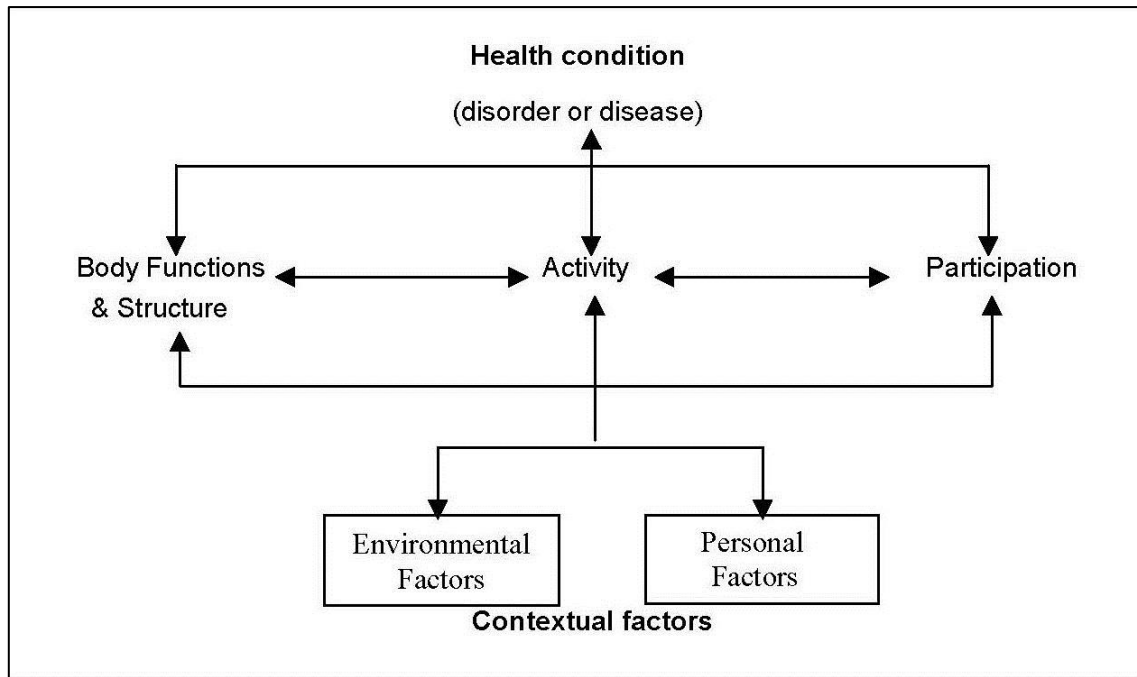


Figure 1. Diagrammatic representation of the interaction between the components of the ICF (World Health Organization, 2002)

1.3.1 Impairment.

The ICF defines impairments as “problems in body function or structure such as a significant deviation or loss” (World Health Organization, 2001b, p. 12). Impairments focus on the physiological aspects of a health problem. Ageing has many effects on the auditory system, including in the inner ear where there is damage to inner and outer hair cells in the cochlea (Hickson & Scarinci, 2007). Age-related hearing impairment is often referred to as presbycusis (Schlauch & Nelson, 2015). Overall, the hearing function of a person with hearing impairment generally has a reduced audibility, decreased dynamic range, decreased frequency resolution, and decreased temporal resolution (Dillon, 2012). Hearing impairment can have a negative impact on a person’s ability to perform activities in daily life. In the ICF, these adverse effects on the ability to perform activities are referred to as activity limitations.

1.3.2 Activity limitations.

Activity limitations are defined in the ICF as “difficulties that an individual may have in executing activities” (World Health Organization, 2001b, p. 12). Some of the most common activity limitations recounted by people with hearing impairment before obtaining hearing aids include problems understanding speech and difficulties listening to the television or radio (Stark & Hickson, 2004). A large scale study (2,688 participants) found that a greater degree of hearing impairment is significantly positively associated with more self-reported activity limitations (Dalton et al., 2003).

Subjective assessments of hearing impairment assess the level of activity limitations experienced by a person with hearing impairment. The HHIE contains 25 items, some of which measure activity limitations (Ventry & Weinstein, 1982). Examples of some of the items include, “Does a hearing problem cause you difficulty when listening to TV or radio?” and “Does a hearing problem cause you to use the phone less often than you would like?” Activity limitations can limit the participation of a person with hearing impairment in activities that are part of daily living. In the ICF, these limitations on participation in activities are referred to as participation restrictions.

1.3.3 Participation restrictions.

Struggling to hear in various situations can lead to people avoiding those situations altogether, so may also result in significant participation restrictions. The ICF describes participation restrictions as “problems an individual may experience in involvement in life situations” (World Health Organization, 2001b, p. 12). The higher the degree of hearing impairment, the higher the level of self-reported participation restrictions (Dalton et al., 2003). The HHIE assesses the level of participation restrictions (Ventry & Weinstein, 1982). The degree of participation restriction is measured through questions such as “Does a hearing problem cause you to visit friends, relatives, or neighbors less often than you would like?”

1.3.4 Categories of the ICF that are relevant for hearing impairment.

A group of researchers embarked on a project to determine a brief and comprehensive set of categories of the ICF that are relevant for hearing impairment (Danermark et al., 2010; Danermark, Granberg, Kramer, Selb, & Moller, 2013; Granberg, Swanepoel, Englund, Möller, & Danermark, 2014). As part of this project, Granberg, Pronk, et al. (2014) completed a qualitative study involving adults with hearing impairment that identified 143 ICF categories, many of which were part of the activities and participation component, closely followed by the environmental factors component. The research suggested that activity limitations and participation restrictions are significant aspects of the ICF for people with hearing impairment.

There was a limitation in the research design that introduced some risk of bias. The seven questions asked to patients were designed to address the components of the ICF (Vas, Akeroyd, & Hall, 2016). If symptoms could not be assigned to an ICF category then they were excluded and not reported in the study (Granberg, Pronk, et al., 2014). As a result, key symptoms of hearing impairment may not have been included in the brief or comprehensive sets for hearing impairment (Vas et al., 2016). The questions asked in the study are unlikely to have affected the categories of the ICF that were positively identified by patients as relevant for hearing impairment so, in that sense, the findings remain valid.

The project suggested that people with hearing impairment experienced activity limitations and participation restrictions because of their disability. A communication partner may also experience activity limitations and participation restrictions when conversing with the partner with hearing impairment (Kelly-Campbell & Wendel, 2015). As a result, researchers coined the term third-party disability (Hickson & Scarinci, 2007) to describe the undesirable impact on communication partners.

1.3.5 Third-party disability.

The ICF describes third-party disability as the study of disability and functioning of family members due to the health condition of significant others (World Health Organization, 2001a). A communication partner may experience various psychosocial effects caused by their partner's hearing impairment and these effects are considered a third-party disability (Hickson & Scarinci, 2007). The partner with normal hearing does not have a hearing health condition but may experience activity limitations and participation restrictions because of the partner's hearing impairment (Scarinci, Worrall, & Hickson, 2012).

Scarinci et al. (2009b) illustrated that third-party disability of spouses of people with hearing impairment can be described using the ICF. These researchers sought to identify the core domains and categories of the ICF that describe the third-party disability of the spouses of older adults with hearing impairment. They found that the majority of problems reported by spouses in semi-structured interviews were able to be linked to components of the ICF, mainly the activities and participation components. In the study, spouses reported activity limitations and participation restrictions in several domains: communication; domestic life; interpersonal interactions and relationships; and community, social, and civic life. The researchers also found that a number of contextual factors appeared that affected a spouse's third-party disability. Further research is required to understand how some codes apply to third-party disability, for example, the significance of bodily functions.

Scarinci et al. (2009b) examined indirect environmental factors, which had the most significant impact on the person with hearing impairment but also affect the spouse's disability. They suggested that hearing aids were an indirect facilitator. Lack of support from the spouse with hearing impairment and hearing professionals' attitudes towards the psychosocial effects of hearing impairment were direct barriers relevant to third-party disability.

The ICF has been identified as a useful way of portraying the effects of hearing impairment on spouses. A diagrammatic representation has been developed by Scarinci et al. (2009b) and this is displayed in Figure 2.

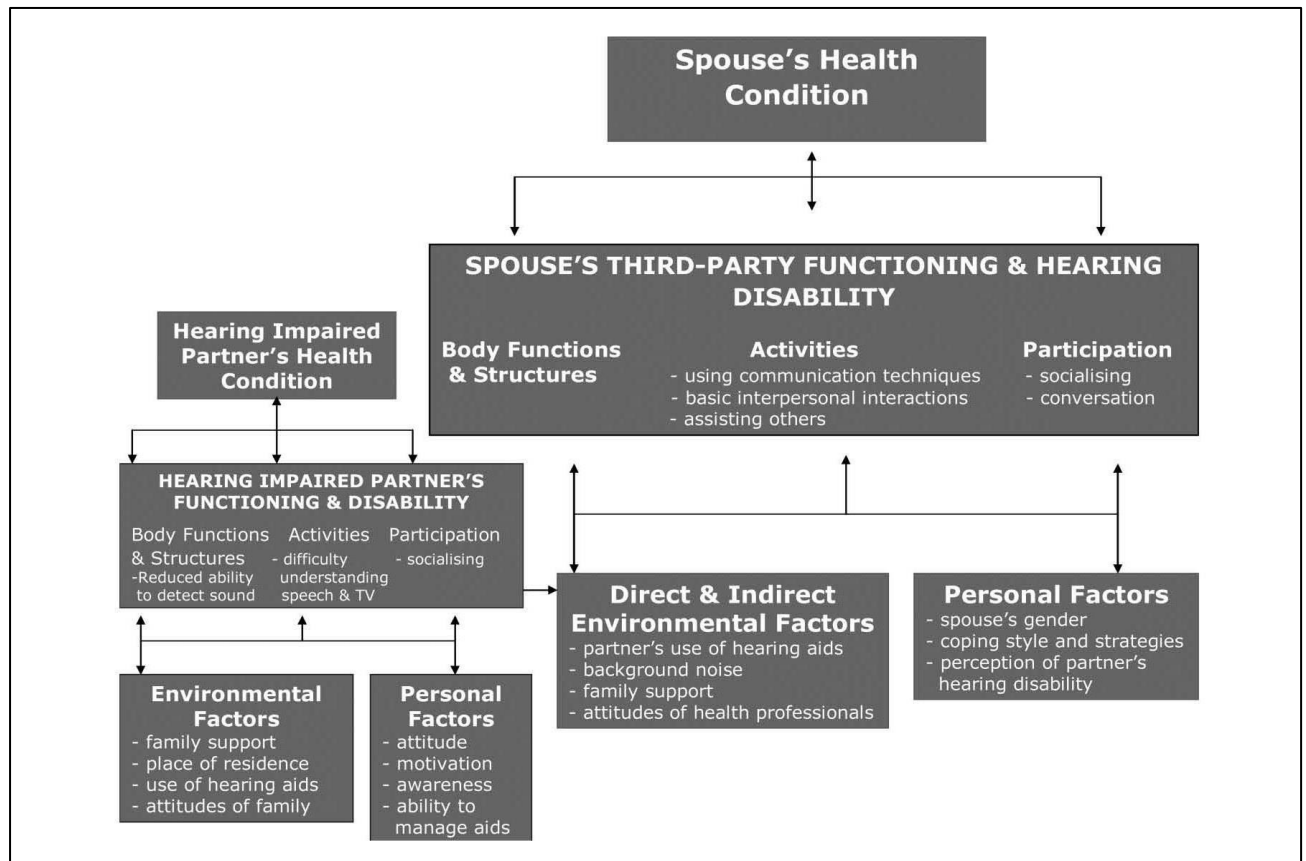


Figure 2. Diagrammatic representation of how the ICF can be applied to third-party disability in spouses of older adults with hearing impairment (Scarinci et al., 2009b).

Reprinted with permission, see Appendix A.

The diagram illustrates the relationship between the third-party disability and the spouse's hearing impairment. The hearing impairment of a spouse is an environmental factor that creates the third-party disability of the other partner. The spouse's functioning is also influenced by other personal and environmental factors. Consequently, there are differing levels of third-party disability experienced by spouses. The research was conducted on

spouses but the findings can be extrapolated to suggest that intimate partners and other communication partners may also experience third-party disability.

There were many positive aspects to the research design but there were also some limitations. Although the majority of challenges identified by spouses could be linked to the ICF, there were three themes that were not able to be coded. These were not given further consideration in the study but could be significant components of a communication partner's experiences. In addition, the researchers acknowledged some difficulties with the coding process because some of the codes were overlapping or ambiguous. Overall, the study was significant as it suggested that the concept of third-party disability and the ICF could be used to explain the impacts of hearing impairment on a communication partner. Researchers then became interested in quantifying the third-party disability experienced by communication partners.

Questionnaires have been developed to collect information from communication partners. These include the Hearing Handicap Inventory for the Elderly for Spouses (HHIE-SP), which is used to measure the social and emotional impacts of hearing impairment on the person with hearing impairment, as perceived by the spouse (Newman & Weinstein, 1988). Such questionnaires are a proxy measure whereby the communication partner reports on the quality of life of the partner with hearing impairment (Preminger & Meeks, 2012). An alternative is the Significant Other Assessment of Communication whereby the communication partner assesses the effects of hearing impairment on the partner with hearing impairment (Schow & Nerbonne, 1982). These measures provide what Hétu, Jones, and Getty (1993, p. 364) describe as “a one-sided view” of the challenges associated with hearing impairment in an intimate relationship.

Reports that assess third-party disability are different from proxy reports. Third-party reports measure the third-party disability that arises from regularly communicating with

someone with a hearing impairment (Scarinci et al., 2009a). They allow for a two-sided analysis by acknowledging the impact that hearing impairment has on communication partners (Hétu et al., 1993). Hearing-related quality of life is likely to be individual to each person (Preminger & Meeks, 2012). Communication partners may report different levels of health-related quality of life even though their partners have a similar degree of hearing impairment. For example, it has been suggested that communication in a relationship is more highly valued by women than by men (Wallhagen, Strawbridge, Shema, & Kaplan, 2004), so women may report greater psychosocial effects of hearing impairment.

Specific questionnaires to measure the nature and extent of communication partner third-party disability have been prepared. These aim to identify the level of activity limitations and participation restrictions (the psychosocial aspects of the ICF) that are caused by having a partner with hearing impairment (Preminger & Meeks, 2012). There are only three known scales that have been developed to measure third-party hearing-related quality of life in a communication partner. Knussen et al. (2004) developed a questionnaire to measure what they termed “caregiver hearing hassles.” It was designed to assess the social and psychological impact of an older family member’s hearing impairment on younger relatives. Scarinci et al. (2009a) then developed and psychometrically tested the Significant Other Scale for Hearing Disability (SOS-HEAR) specifically for use with spouses of older people with hearing impairment. It is a 27-item questionnaire that is designed to measure the effect of hearing impairment in older people on the communication partner. The SOS-HEAR was developed based on qualitative interviews previously completed by Scarinci, Worrall, and Hickson (2008). It was later used by Scarinci et al. (2012) to demonstrate that 98% of spouses of older people with hearing impairment experience third-party disability and 36% have a severe or complete disability in at least one area assessed by the SOS-HEAR.

An alternative scale called the Hearing Impairment Impact-Significant Other Profile (HII-SOP) has been formulated and psychometrically tested by Preminger and Meeks (2012). It is a 20-item scale that measures the third-party hearing impairment-related quality of life in spouses and partners of people with hearing impairment. These researchers note that the SOS-HEAR and the HII-SOP were developed around the same time. They state that the HII-SOP is a shorter scale that measures third-party disability in communication partners of any age. In contrast, the SOS-HEAR questionnaire has more content and is recommended for use with older communication partners.

As a result of the development of these questionnaires, it is now possible to determine the consequences that hearing impairment creates for people with hearing impairment and communication partners (Habanec & Kelly-Campbell, 2015). The questionnaires provide a method of identifying communication partners of people with hearing impairment who are in need of assistance (Scarinci et al., 2009a). They also provide a different perspective on the outcomes of management strategies. They enable the assessment of the impact of a management strategy on the communication partner's third-party disability. Methods of measuring third-party disability are likely to assist with acknowledging and addressing the impact of hearing impairment on communication partners during audiological rehabilitation (Scarinci et al., 2009a). The combined effect of the ability to quantify third-party disability and the acknowledged interactions between the various components of the ICF has resulted in an enhanced focus on the impact of hearing impairment on communication partners.

1.3.6 Evaluation of the ICF.

The ICF extends the focus beyond physical impairments and suggests that audiologists can best determine the impact of hearing impairment through a global analysis of activity limitations, participation restrictions, and contextual factors (Grenness, Meyer, Scarinci, Ekberg, & Hickson, 2016). The ICF acknowledges that the interaction between

components determines the severity of a hearing impairment so it is a patient-centred approach (Schauer, 2016). The ICF recognises the psychosocial effects of hearing impairment and “merges a biomedical paradigm with a social paradigm such that a wider understanding of human functioning can be facilitated” (Granberg, Pronk, et al., 2014, p. 778).

The more holistic focus of the ICF means that it is a desirable model to apply in clinical practice. Sometimes current service delivery is inconsistent with ICF principles. For example, a study of the history-taking component of initial audiology consultations revealed that the interaction was audiologist-controlled and little emotional relationship building occurred (Grenness, Hickson, Laplante-Lévesque, Meyer, & Davidson, 2015).

There is a limitation in the process that was used to compile the ICF. Tysome et al. (2015) suggest that the patient-focus of the ICF is limited because it was developed based on the results of an internet survey of healthcare professionals and a subsequent consensus meeting rather than as a result of studying patient perspectives. These researchers are seeking to develop outcome measures that focus on patient perspectives. Their approach is consistent with patient-centred care which has become a core framework for the management of hearing impairment.

1.4 Management of Hearing Impairment

Given the prevalence of hearing impairment and its negative effects, management that lessens the impact of hearing impairment is imperative. There are a variety of management strategies available. The modern approach to management is patient-centred care, which involves using a shared decision making process between the audiologist and the person with hearing impairment to develop a management plan (Laplante-Lévesque, Hickson, & Worrall, 2010a). The audiologist provides information and counsels the patient, who makes the final

decisions about treatment. There are various management options, which can form part of a management plan.

1.4.1 Management options.

Many management options have emerged over the years including hearing aids, cochlear implants, assistive listening devices, and auditory training (Tye-Murray, 2015). For the most part, management has focused on improving the sensory skills of the person with hearing impairment (Preminger & Lind, 2012). The most common management strategy is the provision of hearing aids. Audiologists can use self-report measures, including the Client Oriented Scale of Improvement (COSI), to measure patient satisfaction with hearing aids (Dillon, 2012). The COSI can be completed with input from communication partners. Studies have shown hearing aids effectiveness in improving the quality of life for people with hearing impairment and their significant others (Chisolm et al., 2007; Stark & Hickson, 2004). Despite the established benefits, people with hearing impairment are often reluctant to adopt hearing aids. Kochkin (2009) reported that in the US, only approximately 25% of people with hearing impairment adopt hearing aids.

Hearing aids are not the only treatment available for older adults with hearing impairment. There is also a variety of hearing assistance technologies, such as FM systems, loop systems, and television devices (Dillon, 2012). Hearing aids and hearing assistance technologies can be used in combination and this commonly occurs in New Zealand (Kelly-Campbell & Lessoway, 2015).

Additionally, audiological rehabilitation has advanced largely due to the increased awareness of the impact that the communication situation has on human interaction (Preminger & Lind, 2012). The acknowledgement of the role of both participants in real-world conversations has resulted in more focus on communication partners (Tye-Murray, Witt, Schum, & Sobaski, 1994). Audiologists have developed auditory training and

communication programmes that enhance speech perception and train participants to use communication strategies (Kramer, Allessie, Dondorp, Zekveld, & Kapteyn, 2005). Communication programmes can be delivered in an individual (Sweetow & Palmer, 2005) or group format (Hawkins, 2005).

Tye-Murray, Spehar, Sommers, and Barcroft (2016) completed a recent study that involved auditory training of people with hearing impairment using stimuli prepared by frequent communication partners. The study found that auditory training resulted in better speech discrimination of frequent communication partner speech but did not improve speech recognition. These findings suggest that there is value in ensuring that stimuli used in auditory training are as similar as possible to the stimuli that a person with hearing impairment encounters in everyday life. An auditory training programme that adopts the approach of allowing a communication partner to record auditory training items is Customized Learning: Exercises in Aural Rehabilitation (Tye-Murray, 2016a).

The evidence on the effectiveness of communication programmes is mixed. There is some evidence that communication programmes are effective and have positive self-reported outcomes (Hickson, Worrall, & Scarinci, 2006). However, a recent systematic review with meta-analysis of non-equipment based interventions for hearing or visually impaired older adults revealed no significant effects on emotional or functional status, self-efficacy, or social participation (Roets-Merken et al., 2015). Selection and implementation of appropriate management options is important to ensure successful rehabilitation.

1.4.2 Outcomes of successful rehabilitation.

Successful rehabilitation can have a positive influence on people with hearing impairment and their communication partners. A systematic review of the evidence has shown that both hearing aids and communication programmes decrease activity limitations and participation restrictions (Hickson, Laplante-Lévesque, & Wong, 2013). Hearing aid

rehabilitation also generally results in improved health-related quality of life (Niemensivu, Manchaiah, Roine, Kentala, & Sintonen, 2015).

There is a limited amount of research on the impact of effective audiological rehabilitation on communication partners. Studies involve the use of hearing aids or cochlear implants or participation in audiological rehabilitation programmes. Available research indicates that successful rehabilitation of the person with hearing impairment has positive consequences for the communication partner. Treatment of the person who has a hearing impairment generally results in the communication partner experiencing improvement in quality of life, communication, feelings towards the person with hearing impairment, and activity participation (Kamil & Lin, 2015; Stark & Hickson, 2004). The preliminary findings of a recent study of individuals with hearing impairment and cognitive impairment indicated that hearing aids can decrease a spouse's perceived burden of communication difficulties (Dupuis, Lemke, Reed, & Pichora-Fuller, 2016). It is therefore reasonable to assume that there is value in including both people with hearing impairment and communication partners in treatment decisions. As a result, it is important to consider the role that communication partners play in audiological rehabilitation.

1.5 Role of Communication Partners in Management of Hearing Impairment

A communication partner can play a variety of roles in the management of the hearing impairment of a partner. The extent of communication partner influence appears to change at different points in the rehabilitation process. Communication partners often encourage people with hearing impairment to seek help (Donaldson et al., 2004). There is limited research available but it suggests that there is a positive correlation between help seeking and motivation from others (Knudsen et al., 2010). Despite this, the role of family members in hearing care appointments is minimal (Ekberg et al., 2015).

There is also limited evidence regarding the part that communication partners play in successful audiological rehabilitation. For hearing aid adoption, it seems that intrinsic self-motivation is correlated with greater hearing aid adoption but motivation from others did not influence hearing aid adoption (Ridgway, Hickson, & Lind, 2015). A number of studies found that whether motivation comes from the person with hearing impairment or others does not affect hearing aid use (Hickson, Hamilton, & Orange, 1986; Hickson, Timm, Worrall, & Bishop, 1999; C. Wilson & Stephens, 2003). However recent evidence has suggested greater involvement of communication partners in the rehabilitation process may increase the rates of hearing aid adoption and usage (Manchaiah et al., 2012; Ng & Loke, 2015; Singh & Launer, 2016). There is mixed evidence about whether there is a relationship between source of motivation (self or others) and hearing aid satisfaction (Knudsen et al., 2010). Communication partners can play a role in various aspects of management.

1.5.1 Role in help-seeking.

At a social level, relationships are the most relevant aspect affecting help-seeking (Mahoney et al., 1996). The most significant influence is the relationship with the spouse but other family members (particularly daughters) also prompted people with hearing impairment to seek help (Carson, 2005). The strength of this influence is perhaps explained by a higher level of third-party disability being experienced by the spouse than by other relatives. Preminger, Montano, and Tjornhoj-Thomsen (2015) found that adult children of parents with hearing impairment experienced third-party disability, but the participation restrictions and activity limitations experienced by children are less than those faced by spouses. Given spouses' higher levels of third-party disability, research on couple's experiences with hearing impairment is a pressing issue and so this study investigated the experiences of the intimate partners of people with hearing impairment.

Studies have consistently found a link between motivation from communication partners and help-seeking behaviour. Duijvestijn et al. (2003) found that the social pressures on people who chose to consult for audiological services were greater than the social pressures on people who chose not to consult. Donaldson et al. (2004) found that the majority of patients presenting for audiological services are under the persuasion or influence of a communication partner. In a more recent study on the factors influencing help-seeking behaviour in people with hearing impairment, Meyer, Hickson, Lovelock, Lampert, and Khan (2014) found that less negative support and more positive support for hearing aids from communication partners prompted help-seeking. Other researchers have reported that other people's experiences, recommendations and support can both positively and negatively influence a person with hearing impairment who is making decisions about interventions such as hearing aids, a group communication programme and an individual communication programme (Laplante-Lévesque, Hickson, & Worrall, 2010b). Recently, Schulz et al. (2016) measured people with hearing impairments' perceptions of the level of burden that their hearing impairment caused for their respective communication partners. The perceived level of burden was a significant predictor of whether the person with hearing impairment pursued hearing evaluation.

Therefore, it is sensible to assume that the behaviour of the communication partner might play an important part in whether the person with hearing impairment seeks audiological services (Manchaiah et al., 2012). After reviewing the literature, Meyer and Hickson (2012) concluded that there was convincing evidence that the attitudes of significant others influence the person with hearing impairment's decisions about hearing rehabilitation.

Communication partners are impacted by hearing impairment and are often a catalyst for accessing audiological services so they are an important part of the rehabilitation process (Armero, 2001; Hallberg, 1999; Knudsen et al., 2010; Scarinci et al., 2008). Persons with

hearing impairment sometimes delay help-seeking and this may be able to be addressed by involving communication partners in the audiological rehabilitation process (Manchaiah et al., 2012). Hearing care appointments are an important aspect of the rehabilitation process so I examined the role of communication partners in those appointments.

1.5.2 Role in hearing care appointments.

Communication partners are motivating forces who are significantly affected by hearing impairment but very little attention has been paid to their role within adult audiology appointments. In a recent study of communication between audiologists, patients and companions (mostly spouses) during history-taking, both audiologists and patients made significantly more utterances than the companions (Grenness et al., 2015). The study revealed that the utterances made by companions were commonly relationship building (52%) or providing information (41%).

In a subsequent study that focused on communication partner roles in hearing care appointments, Ekberg et al. (2015) used quantitative coding and conversation analysis to examine video-recorded audiology appointments and found that family members (mostly spouses) make a minimal contribution to interaction during the appointments. These researchers discovered that family members self-select to speak by responding to questions which the audiologist directed to the patient, self-initiating expansions of patient comments, and asking questions. Another important outcome of the study was that when a family member participated in the appointment, the audiologist endeavoured to redirect the conversation back to the patient. Audiologists' concentration on people with hearing impairment may suggest that they perceive them as the central focus in audiology appointments (rather than treating the family as a whole). The perception that family members were not patients was held by some audiologists in a study by Meyer, Scarinci, Ryan, and Hickson (2015). Clinicians also report more isolated instances where

communication partners have either completely dominated a rehabilitation session or remained sitting in the waiting room during appointments with a seemingly negative attitude (Preminger & Lind, 2012).

Both research and anecdotal evidence point to a low level of involvement by communication partners in audiological rehabilitation. Minimal participation is perhaps, at least in part, reinforced by audiologists who, at hearing aid fittings, appear to discuss practical matters but do not cover social and emotional support (Barker, Mackenzie, & de Lusignan, 2016). The amount of participation appears to be less than what could be beneficial given the influence that a communication partner has on their partner with hearing impairment. Ekberg et al. (2015) suggested that the self-initiated participation in audiology appointments by family members indicated that they want to be more involved and share their experiences.

1.5.3 Role in successful rehabilitation.

There is limited evidence on the role that communication partners play in audiological rehabilitation. Some researchers have hypothesised that successful rehabilitation depends on family members' openness to become involved in rehabilitative communication strategies (Ekberg et al., 2015). Support from communication partners has a positive influence on the person with hearing impairment and can improve the outcome of rehabilitation (Miller, 1983).

A recent study attempted to analyse how autonomous and controlled motivation affected hearing aid adoption of first time hearing help seekers (Ridgway et al., 2015). Autonomous motivation was defined as intrinsic or internalised and controlled motivation originates from a sense of obligation or external pressure (Deci & Ryan, 2000). The results indicated that autonomous motivation was correlated with greater hearing aid adoption but controlled motivation did not influence hearing aid adoption. These researchers suggest that

audiologists seek to use autonomous motivation to facilitate patients becoming more involved in clinical decisions. In terms of hearing aid use, studies had consistently found that self-motivated hearing aid users and hearing aid wearers who are motivated by others do not differ in their level of hearing aid use (Hickson et al., 1986; Hickson et al., 1999; C. Wilson & Stephens, 2003). However, some recent research has suggested that greater involvement of communication partners in the rehabilitation process may increase the rates of hearing aid adoption and usage (Manchaiah et al., 2012; Ng & Loke, 2015; Singh & Launer, 2016).

Communication partner support may be linked to hearing aid self-efficacy of the partner with hearing impairment (Smith & Lea West, 2006). People who did not own hearing aids more commonly reported adequate hearing aid self-efficacy if they perceived that there was more positive support from a communication partner (Meyer, Hickson, & Fletcher, 2014). Hearing aid satisfaction is related to hearing aid self-efficacy so it could be inferred that improving self-efficacy may also improve satisfaction, although further research is needed on this subject (Kelly-Campbell & McMillan, 2015).

Generally, research on the psychosocial factors affecting hearing aid satisfaction is lacking (Singh, Lau, & Pichora-Fuller, 2015). Available evidence on a link between hearing aid satisfaction and social support is mixed. C. Wilson and Stephens (2003) did not observe a relationship between source of motivation (self or others) and hearing aid satisfaction. However, Hickson et al. (1999) found that self-motivated hearing aid users had higher satisfaction with amplification in the long term than hearing aid users motivated by others. More recently, Singh et al. (2015) found that perceived social support was positively correlated with hearing aid satisfaction. These researchers' findings had good reliability because the result was replicated in two studies, each using a different sample.

The research linking communication partner support with successful rehabilitation is limited because the studies are correlational so they do not imply a causal relationship. A

further limitation is that some studies have shown statistically significant relationships but they do not explain the reason that social support results in successful rehabilitation.

There is also some evidence to suggest that communication partner participation in audiological rehabilitation results in positive outcomes for both the person with hearing impairment and the communication partner. Habanec and Kelly-Campbell (2015) demonstrated that working adults with hearing impairment who do not use hearing aids can benefit from group audiological rehabilitation. They also found that a communication partner's third-party disability can be reduced through participation in the same group rehabilitation sessions. Kelly-Campbell and Wendel (2015) found that the levels of cognitive anxiety experienced by first-time hearing aid wearers and their communication partners were similar at the initial appointments but differed through the rest of the consultation process. These researchers suggested that differing anxiety levels meant that it was beneficial for both partners to be involved in the rehabilitation process. Both these studies indicate that it may be beneficial to include communication partners in management plans because both members of the couple have to adjust to the rehabilitation strategies (Kelly-Campbell & Wendel, 2015). Greater communication partner involvement may have positive impacts for the person with hearing impairment and can also assist the communication partner. Accordingly, it is important to consider the factors that affect communication partner participation in audiological rehabilitation.

1.5.4 Audiologists' perceptions of the factors affecting family member involvement in audiological rehabilitation.

A recent qualitative study by Meyer et al. (2015) identified five major factors that audiologists believed affected family member involvement in audiological rehabilitation. These factors were: (a) approaches to family involvement, (b) time barriers, (c) misconceptions about hearing aids, (d) mismatched needs and priorities, and (e) family

dynamics. The study found that audiologists generally believed that they encouraged family member participation in hearing care appointments. The time barriers raised by the audiologists were scheduling difficulties and limited appointment times. The audiologists also perceived that patients often had a misconception that hearing aids were the only management solution. Another issue identified by the audiologists was that sometimes there was a mismatch between the person with hearing impairment and the family member's perceptions of the level of hearing and associated problems. The study suggested that family dynamics play a role in several ways, including whether a close communication partner was supportive of audiological rehabilitation and the strength of family relationships.

The research reflected the opinions of nine audiologists from a diverse range of backgrounds. Meyer et al. (2015) acknowledged that their work was exploratory and that more research was required to further understand family involvement in audiological rehabilitation. A limitation of the study was that it focused solely on audiologists' perceptions of the factors affecting family member participation in audiological rehabilitation rather than obtaining information direct from communication partners. There is a chance that audiologists' perceptions do not accurately or fully reflect the perceptions of communication partners. I was interested to see whether similar or different themes would emerge from this study which focused on the perceptions of communication partners of people with hearing impairment. Given the barriers that audiologists perceive to family member involvement in audiological rehabilitation, it is important that steps are taken to improve communication partner participation in management strategies.

1.6 Improving Communication Partners' Involvement in Rehabilitation of Hearing Impairment

Conversation involves more than one person and it has long been recognised that there is value in communication partners being more involved in audiological rehabilitation

(Erber, 1996). There is a strong rationale for improving communication partner involvement in the treatment of hearing impairment. In this Section 1.6, I discuss and evaluate a number of models and tools that have been designed for clinicians to use to facilitate communication partners becoming more involved in rehabilitation.

1.6.1 Increasing communication partners' role in rehabilitation.

Research outcomes indicate that it is very important to include communication partners in the rehabilitation process. There are a variety of reasons for this: (a) communication partners can motivate and encourage people with hearing impairment to seek audiological services (Donaldson et al., 2004), (b) hearing impairment can adversely impact communication partners (Hickson & Scarinci, 2007; Scarinci et al., 2012), (c) communication partners provide support to persons with hearing impairment enhancing treatment outcomes (Miller, 1983), and (d) treatment of people with hearing impairment can have positive consequences for communication partners (Habanec & Kelly-Campbell, 2015). The impacts on the relationship between the person with hearing impairment and communication partners are often psychosocial but are part of the domain of an audiologist because they are caused by hearing impairment (Hétu et al., 1993).

There are different perspectives about the communication partner's role in rehabilitation. The communication partner can be seen as providing support to the person with hearing impairment. Another view is that the requirements of both partners should be considered as part of the rehabilitation process (Hétu et al., 1993). There are also different perspectives on the role that a healthcare professional should play in rehabilitation. A medical model suggests that the professional solves the patient's problems but in a helping professions model there is joint exploration of the options and collective decision making (Anderson, 1977). In my opinion, the needs of communication partners should be considered in audiological rehabilitation and audiologists are best to use a helping professions model

because it is more collaborative and so provides more opportunity for communication partner involvement in rehabilitation.

The inclusion of communication partners in audiology appointments may require audiologists to change the way that they provide services (Montano & AlMakadma, 2012). Grenness et al. (2015) found that audiologists asked fewer psychosocial questions and more medical questions when a communication partner attended the appointment. These researchers suggested that the decreased discussion of lifestyle issues was a barrier to positive patient and communication partner outcomes that needed to be addressed. Tye-Murray (2016b) commented that generally audiologists do not give communication partners a defined role to play in audiological rehabilitation that would enable them to feel part of the solution. Rehabilitation services need to include a focus on the social factors that influence the level of adherence to a management plan (Erdman, Wark, & Montano, 1994; Noble & Héту, 1994; Ross, 1997). To facilitate greater involvement of communication partners in audiological rehabilitation, researchers have developed models to represent communication partners within the social sphere of a person with hearing impairment (Manchaiah et al., 2012).

1.6.2 Models to improve communication partners' involvement.

There may be many communication partners within the social network of a person with hearing impairment. A model can be a useful tool in clinical situations to explain the role that communication partners play in the life of a person with hearing impairment (Manchaiah et al., 2012). Communication breakdowns occur with different people and in different environments. Acknowledging the diverse nature of communication is an important part of helping people with hearing impairment and their communication partners to develop strategies for effective communication (Manchaiah & Stephens, 2011). There is no standardised approach to the involvement of communication partners in audiological rehabilitation (Manchaiah et al., 2012).

The Ida Institute developed the “Communication Rings” (Montano & AlMakadma, 2012) to facilitate people with hearing impairment to reflect on the people who are part of their social network, and to help them to understand the impact that their hearing impairment may have on others. The tool consists of a series of concentric circles all surrounding the word “me.” The inner most circle represents the person with hearing impairment and each of the outer rings (labelled 2, 3, and 4) represents a different level of contact with the person with hearing impairment. Rings closer to the person with hearing impairment represent more frequent communication partners or people with whom the person with hearing impairment feels emotionally close.

In my view, the Communication Rings are easy to understand and can help build rapport between the clinician and the patient. Montano and AlMakadma (2012) suggested that the exercise could be completed by the person with hearing impairment in the waiting room prior to an appointment so that the clinician can spend time discussing the results with the patient in the appointment. These researchers submitted that the Communication Rings can also be used by an audiologist as a tool to obtain information from a patient in a nonthreatening way.

Manchaiah and Stephens (2011) suggested that the Communication Rings are too simplistic and do not adequately represent the complexity and dynamic nature of interpersonal relationships. For example, Montano and AlMakadma (2012) proposed that ring 2 include people who spend a lot of time with, or are emotionally close to, the person with hearing impairment. However, these were two different concepts and emotional closeness was not necessarily related to frequency of contact. Manchaiah and Stephens (2011) proposed an alternative model called the “Communication World” based on the analogy of a solar system. The sun in the centre represents the person with hearing impairment. The communication partners are represented by the planets. The size of the planet indicates the

frequency of communication and the planet's distance from the sun represents emotional closeness. Dotted lines between the sun and the planets suggest communication difficulties and solid lines represent ease of communication. Figure 3 represents the basic structure of the Communication World.

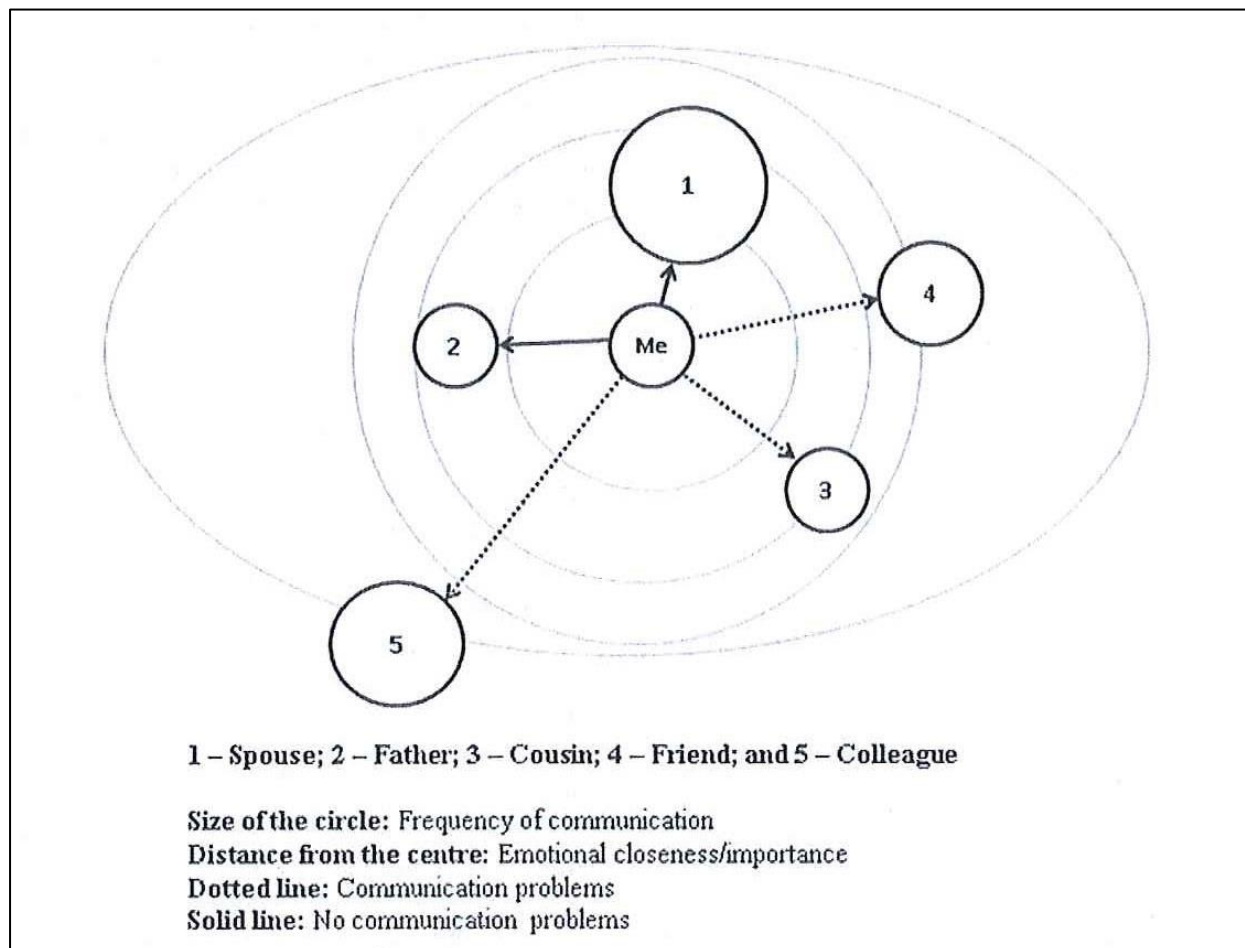


Figure 3. Example of the Communication World of a person with hearing impairment (Manchaiah & Stephens, 2011) reprinted with permission, see Appendix B. The website of Audiological Medicine (journal of original publication) is www.tandfonline.com.

The emergence of specific models designed to improve communication partner involvement in audiological rehabilitation reflects a change in the overall service delivery model in audiology. The professional focus has shifted from the medical and technological aspects of hearing health to a more patient- and family-centred approach (Hickson, 2012).

Sometimes the phrases patient-centred care and family-centred care are used interchangeably (Grenness, Hickson, Laplante-Lévesque, & Davidson, 2014b). Hughes, Bamford, and May (2008) found that these types of centeredness contain the same conceptual themes such as, communication, shared responsibility and therapeutic alliance but the different types of centeredness were applicable in different contexts. The use of the word “patient” tends to imply a focus on the unique attributes of the person with hearing impairment (Bertalanffy, 1971) and “family” suggests the inclusion of family members of the person with hearing impairment in rehabilitation (Ahmann & Johnson, 2000).

Grenness et al. (2014b, p. S60) describe patient-centred care as “patients should be encouraged to be active participants in their health care through the creation of a power-balanced, therapeutic relationship with their health professionals.” These researchers completed a literature review and concluded that a detailed definition of patient-centred care in audiology did not exist and it would be desirable if one was developed. To address this deficiency, Grenness, Hickson, Laplante-Lévesque, and Davidson (2014a) developed a model of patient-centred audiological rehabilitation by completing semi-structured qualitative interviews of adults who had owned hearing aids for a least one year. The overarching theme was the audiologist providing individualised care to the person with hearing impairment. Patients also perceived that patient-centred audiologists valued a therapeutic relationship, kept the patient informed and encouraged patient participation in decision making. The overarching patient preference for individualised care reinforced the findings of earlier research which suggested that patients have different preferences and physicians need to adapt their behaviour to serve these (Krupat, 2006; Schwartz, Hasnain, Eiser, Lincoln, & Elstein, 2006).

A recent survey of audiologists indicated that audiologists preferred patient-centeredness (Laplante-Lévesque, Hickson, & Grenness, 2014). There is support for patient-

centred care but further research is required to ensure that it is implemented to benefit patients. More research is required to understand what persons with hearing impairment and communication partners perceive is the everyday impact of hearing impairment (Vas et al., 2016). Identification of these impacts could help determine the focus of patient-centred management plans and assist with the selection of appropriate outcome measures. Further research is also required to explore the connection between patient-centeredness and rehabilitation outcomes (Grenness et al., 2014a).

Recently, some researchers have argued that patient-centred care is limited as it focuses on the patient-audiologist relationship and does not acknowledge the impact of hearing impairment on communication partners (Grenness et al., 2016). An alternative model to involve communication partners in audiological rehabilitation is a family-centred care approach. Family-centred care originally emerged from the discipline of psychology. Family systems theory examines peoples' behaviour in the context of their family situation (Goldenberg & Goldenberg, 2013). Family-centred care has been used to successfully treat various psychological disorders (Emmelkamp & De Lange, 1983). Scarinci, Meyer, Ekberg, and Hickson (2013) have called for a family-centred approach to hearing healthcare. They argued that it had beneficial outcomes in psychology and healthcare and was likely to have similar results in audiology due to the impact that hearing impairment has on people with hearing impairment and their families.

The family-centred care approach is based on the theory that the audiologist assists both the partner with hearing impairment and the communication partner. An alternative model proposed by Borg and Borg (2015) suggests that the audiologist only trains the person with hearing impairment in communication strategies (not the communication partners). These researchers propose that the audiologist also gives the person with hearing impairment training in counselling of communication partners. The approach is designed to empower the

person with hearing impairment to encourage supportive behaviour from communication partners. These researchers were able to show that the approach of training only the person with hearing impairment leads to increased empathy, empowerment, competence, and counselling ability in secondary school students with hearing impairment. In my view, only training the person with hearing impairment may suit some family relationship dynamics. However, it does place significant responsibility solely on the person with hearing impairment and appears to be a less suited to people who prefer a collaborative approach to rehabilitation.

1.6.3 Tools to improve communication partners' involvement.

There are also a series of tools that can be used by audiologists to involve communication partners in the audiological rehabilitation process. As discussed in Section 1.4.1, audiologists have developed group communication programmes as a rehabilitation strategy (Getty & Héту, 1991; Preminger, 2003). These aim to reduce the frequency of communication breakdowns (Manchaiah et al., 2012). Group communication programmes have been revealed to have benefits for both people with hearing impairment and their communication partners. Preminger (2003) found that people with hearing impairment who attended rehabilitation sessions with their communication partner experienced larger decreases in hearing handicaps scores than people with hearing impairment who attended the classes on their own. Preminger and Meeks (2010) completed a randomised controlled study of the effectiveness of a group communication strategies programme. The results showed that spouses experienced significant improvements in third-party hearing loss-related quality of life as a result of completing the programme.

Questionnaires have also been developed to collect information from the communication partners of persons with hearing impairment. These are described in Section 1.3.5. The key measures of third-party disability (SOS-HEAR and the HII-SOP) have been

psychometrically tested, which increases their validity (Preminger & Meeks, 2012; Scarinci et al., 2009a). The information provided by the communication partners can be used in counselling or during the rehabilitation goal setting process (Manchaiah et al., 2012).

Hickson et al. (2016) suggested three tools to help audiologists involve communication partners in audiological rehabilitation. First, audiologists could use a decision aid that lists the options and their advantages and disadvantages. Second, application of the Transtheoretical Model of Change (TCP) may enable clinicians to decide the appropriate course of action based on the patient's current stage of change. Third, audiologists may benefit from using the Goal Sharing for Partners Strategy (GPS) with patients and their communication partners.

The Ida Institute has developed the GPS that can help to set rehabilitation goals (Ida Institute, n.d.-b). The GPS is a five-step process designed to help the person with hearing impairment and the communication partner set realistic mutual goals and to consider the steps required to reach those goals (Preminger & Lind, 2012). It was developed based on the Client Oriented Scale of Improvement (Dillon, James, & Ginis, 1997) and Goal Attainment Scaling (Kiresuk & Sherman, 1968). The GPS involves partners identifying how they are affected by hearing impairment. The partners agree with each other on the situations where they would like to improve their communication and identify the steps necessary to achieve that goal.

The Ida Institute has also developed the Communication Partner Journey tool that charts the communication partner's journey through hearing impairment (Gregory, 2012). The aim is to help audiologists understand how communication partners are impacted by hearing impairment and to illustrate how audiologists can influence the patient's journey. Manchaiah et al. (2013) further developed the Communication Partner Journey based on the perspectives of communication partners gained through semi-structured interviews. These researchers suggest that the model is useful for training healthcare professionals and also in

audiological rehabilitation to facilitate discussion between the person with hearing impairment and communication partners.

The Ida Institute has also produced a tool called Living Well to enable self-assessment (Ida Institute, n.d.-d; Schauer, 2016). The person with hearing impairment scans through picture cards displaying common listening situations and selects the four-six cards that represent the most important situations for them in daily communication. They then place them on a board to indicate how easy or difficult the situations are for them to manage and rank them in order of priority using “importance markers.” The audiologist and the person with hearing impairment agree the most effective management strategy for each listening situation. The audiologist records the results of the session in a documentation form that can comprise part of a management plan for the person with hearing impairment and the communication partner.

There is no published research indicating the effectiveness of the Ida Institute’s Communication Rings, GPS, Communication Partner Journey, or Living Well tool in New Zealand and (in my experience) they are not commonly used in New Zealand clinical practice. The Ida Institute stated that the Communication Rings, GPS, and Communication Partner Journey were developed from the collective effort of 75 hearing care professionals who participated in Ida Institute's seminar on Enabling Communication Partnerships from 2009-2010 (Ida Institute, n.d.-a, n.d.-b, n.d.-e). The Living Well tool was developed by Ida Institute staff and was based on the collaborative thinking of hearing professionals who participated in the Ida Institute’s 2011 “Living Well with Hearing Loss” seminar series (Ida Institute, n.d.-c). The clinical tools were largely developed from the knowledge of hearing care professionals rather than being generated as a result of research on the perspectives of communication partners. The clinical use of the tools is yet to be validated, as the process from development to validation can be lengthy. In this context, it would be useful to further

research the perspectives of communication partners in order to gain insights into how better to involve them in the rehabilitation process.

1.7 Research Approaches

Health researchers use a wide range of methodologies. This study used a qualitative research approach. In this thesis, I examine the different research methods and provide an explanation for selecting a qualitative methodology. Broom and Willis (2007) stated researchers' choice of research method is influenced by their belief system about the nature of the world (sometimes referred to as a paradigm). They also suggested that a positivist paradigm maintains that reality is static and objective whereas an interpretivist paradigm maintains that knowledge is socially created. Research methodologies used by researchers who favour the positivist paradigm tend to be quantitative (Rubin & Rubin, 2012) and researchers who prefer the interpretivist paradigm generally encourage the use of qualitative research methodologies (Broom & Willis, 2007). Historically, some researchers have dismissed qualitative research as mere storytelling but these researchers lack the understanding of the richness of information that can arise from in-depth interviews (Rubin & Rubin, 2012). Neither quantitative methodology nor qualitative methodology is superior, and the most appropriate approach depends on the nature of the research question (Best & Kahn, 2006; McMillan, 2012).

The purpose of quantitative research is to identify patterns in data that can be generalised to a broader population and the objective of qualitative research is to form an initial understanding of a concept or to identify people's beliefs and attitudes about an issue (Hennink, Hutter, & Bailey, 2011). Both methods contribute to growing the knowledge base in the field of audiology (Irwin, Pannbacker, & Lass, 2014). Each of these alternative approaches will now be discussed in more detail.

1.7.1 Quantitative research.

Quantitative research involves the collection of numerical information such as frequency counts and measurements of other physical quantities (Nelson, 2009). Quantitative approaches are also used to collect numerical information about psychological states. For example, questionnaires such as the HHIE, measure the extent of disability that a person perceives is caused by a hearing impairment (Ventry & Weinstein, 1982). The researcher aims to obtain empirical data about the relationship between variables (Schiavetti, Orlikoff, & Metz, 2015). Potential confounding variables are controlled for to establish a relationship between the variables of interest in the study. There is a strong focus on statistical analysis and objectivity (Irwin et al., 2014). Quantitative researchers tend to believe that the world is directly observable and that accurate measurement of the world is possible (Rolfe, 2013). Historically, research into hearing aid rehabilitation has predominantly focused on quantitative variables, such as how demographic, personal, technology, and distribution factors influence the outcomes of hearing aid use (Knudsen et al., 2010).

1.7.1.1 Purpose of quantitative research.

The purpose of quantitative research is to explain and predict the relationship between variables (Irwin et al., 2014). It aims to test or validate a hypothesis. Quantitative scores provide an easy method of comparing individuals and groups and participant scores can be compared to standardised norms (French, Reynolds, & Swain, 2001). Data collection is often narrowly focused and the researcher has a detached view of the subject matter (Irwin et al., 2014). Quantitative research is a valuable methodology but it also has some limitations.

1.7.1.2 Limitations of quantitative research.

There is no general consensus on the limitations of quantitative research. French et al. (2001) identified some of the disadvantages of this methodology, including that it results in an oversimplification of complex issues and is conducted in situations that are unrelated to

the real world. These researchers also propose that there may be too much focus on answering the research question and so other relevant issues are overlooked. Broom and Willis (2007) suggested that the limitation of quantitative research was that it did not answer the question of “why.” These authors noted that quantitative research cannot explore what is occurring in a person’s life that may explain the reason that they made a particular decision. Qualitative research seeks to understand and explain the reasons for people’s behaviour.

1.7.2 Qualitative research.

Qualitative research involves collecting information without concern for quantities and relies on nonnumeric forms of data (Best & Kahn, 2006). Qualitative research data often consists of verbal information, which can include detailed descriptions of a person’s behaviour or direct quotes from individuals (Nelson, 2009). Qualitative research is an overarching term that covers a wide variety of research methods and methodologies. It provides in-depth accounts of everyday experiences and attempts to reflect the interpretive nature of our social world (Flick, 2007; Saldaña, 2011).

Best and Kahn (2006) identify three key aspects of a qualitative research approach: design flexibility, purposeful sampling, and naturalistic inquiry. A range of flexible data collection techniques are applied, including semi-structured interviews and focus groups (Jacobsen, 2017). The research often evolves through the course of the study rather than being tightly preconfigured (Rossman & Rallis, 2012). For example, the research question may shift during the study as the researcher uncovers information from the participants (King & Horrocks, 2010). Best and Kahn (2006) suggested that purposive sampling results in participants being selected because they reflect the phenomenon of interest. These researchers also stated that the design strategy of naturalistic inquiry means that real-world situations are studied. There are a range of different qualitative methodologies, some of which are described in Section 1.7.3. Qualitative methodology has become increasingly popular in

audiological research and there have been a significant number of qualitative studies published in recent years (Irwin et al., 2014).

1.7.2.1 Purpose of qualitative research.

Researchers have conducted qualitative research to obtain insightful information rather than objective facts (Shaw, MacKinnon, McWilliam, & Sumsion, 2004). The aims are to build a theory or search for themes or categories (Irwin et al., 2014). This explorative study design can provide a deep appreciation of experiences and produce new information that may otherwise have been ignored (Knudsen et al., 2012). The goal is to describe multiple realities and capture naturally occurring behaviour (Irwin et al., 2014).

Hétu et al. (1993) suggested that qualitative research is appropriate when investigating intimate relationships as participants have the freedom to discuss sensitive issues. These researchers proposed that the methodology is useful for investigating couples' experiences with hearing impairment as it acknowledges that each couple's situation is unique. They suggest that it also gives the person with hearing impairment and the communication partner the freedom to identify and develop specific issues. Unlike other social science methodologies, almost every real-world occurrence can be the subject of a qualitative study (Yin, 2015). Qualitative research has advantages but there are also some limitations.

1.7.2.2 Limitations of qualitative research.

There are a number of limitations with qualitative research. The exploratory design means that qualitative research does not identify specific relationships between variables (Knudsen et al., 2012). As a result, it is difficult to establish a causal link between variables (Irwin et al., 2014). Additionally, Seers (2005) suggested that the results are individuals' subjective experiences so they cannot be generalised to other populations. Although, Seers (2005) also noted that broad generalisability across populations is not the true purpose of qualitative research which is instead to understand the experiences of a population of interest.

Data collection is usually performed through semi-structured interviews. This means that the data collection phase of qualitative research can be more time intensive (Knudsen et al., 2012). Qualitative research also relies on language fluency of the participant (Irwin et al., 2014) and the researcher. Qualitative researchers are very closely engaged with participants and so need to acknowledge how their own life experiences might bias the results of a study (Jacobsen, 2017). There are a range of techniques that can be used to mitigate the risk of bias and increase credibility in qualitative studies. These techniques and how I applied them in this study are discussed in detail in Section 2.4.

1.7.3 Qualitative research approaches.

There are four alternative approaches to qualitative methods that are commonly used in audiology: grounded theory, qualitative content analysis, conversational analysis, and phenomenological analysis (Knudsen et al., 2012). This Section 1.7 provides a description of each research method.

1.7.3.1 *Grounded theory.*

Grounded theory is a systematic method used to develop a model, concept, or theory of a psychological or social practice without a presupposed hypothesis (Knudsen et al., 2012). The methodology is not designed for testing a theory but for proposing a theory (Remenyi, 2014). It is an inductive process that uses observation and reflection to formulate general theories that explain human behaviour (Jacobsen, 2017).

Fundamental strategies used by grounded theorists consist of data collection, analysis, and data coding to identify themes (Belgrave, 2014). The methodology is used widely in social science, business, and organisational studies (Milliken, 2010). It has also been used in audiological research. For example, Hallberg, Pässe, and Ringdahl (2000) used grounded theory to describe the experiences of coping in daily life from the perspective of persons with severe-to-profound hearing impairment.

1.7.3.2 Qualitative content analysis.

There is no consensus about the meaning of qualitative content analysis. It sometimes alludes to searching through text for common words or themes but more broadly refers to analysing written text rather than collecting data based on observation (Patton, 2015). Through the research process, statements are distilled into content-related categories (Elo & Kyngäs, 2008). The approach is systematic as successive parts of the material are assigned to the categories of a coding framework (Schreier, 2012, 2014). Qualitative content analysis is a flexible approach and there are no standard rules for data analysis, which means that the process can be challenging for the researcher (Elo & Kyngäs, 2008).

The methodology reduces data by only focusing on information that is relevant to the research question and having a coding framework that is often at a higher conceptual level than the underlying content that the researcher is analysing (Schreier, 2012). Qualitative content analysis aims to produce a concise and expansive description of a phenomenon, and the result of the investigation is ideas or categories describing a phenomenon (Elo & Kyngäs, 2008). An example of qualitative content analysis being applied in hearing-related research is when Laplante-Lévesque et al. (2012) used qualitative content analysis to study the perspectives of adults with hearing impairment on consulting for hearing services and rehabilitation.

1.7.3.3 Conversational analysis.

Conversational analysis seeks to define the patterns of social life by close analysis of natural conversations (Knudsen et al., 2012). The aim of conversational analysis is to identify recurring patterns across conversations (Spielmann, 1986). Researchers are not particularly interested in the subject matter of the discussion but in seeking to comprehend the rules of a conversation, such as turn taking to speak and not interrupting other people (Gordon, Ellis-

Hill, & Ashburn, 2009). Lind, Hickson, and Erber (2006) used conversational analysis to study the consequences of various conversation repair strategies.

1.7.3.4 Phenomenological analysis.

A phenomenological approach aims to define common features of a phenomenon or the essence of lived experience (Jacobsen, 2017; Knudsen et al., 2012). The essence is the core meaning derived through the appraisal of shared experience over time or across different situations (Moustakas, 1994). To collect information about the essence of an experience, researchers conduct in-depth interviews with people who have experienced the phenomena of interest first-hand (Patton, 2015). Phenomenology has been used in health and hearing-related research. For example, Kelly-Campbell and Plexico (2012) used phenomenological analysis to explore the lived experience of couples living with hearing impairment.

The approach assumes that there is an essence to human experience (Patton, 2015). The research method is rigorous and requires the researcher to bracket past knowledge so that full attention can be applied to the phenomenon of interest (Giorgi, 2008). The researcher then reduces the information to identify themes that represent the essence of the subject matter to obtain a deep understanding of the phenomenon (Creswell, 2013). The methodology has the advantage of allowing a profound understanding of a phenomenon but is time consuming for a researcher (Marshall & Rossman, 2011).

I chose to complete a phenomenological analysis for this study. This approach was the most appropriate because it allowed for deep reflection and aimed to identify the essence of the communication partners' experiences. The precise methodology that I used to conduct this study is detailed in Chapter 2. Before outlining the methodology, I present the rationale for completing this study, the study aims and the research question.

1.8 Study Rationale

There have been very few attempts to systematically involve communication partners in audiological rehabilitation (Manchaiah et al., 2012). However, communication partners often encourage the person with hearing impairment to seek help (Donaldson et al., 2004). In my view, involving communication partners in audiological rehabilitation could potentially reduce the rate of return of hearing aids making the rehabilitation process more successful. For this reason, understanding what helps and prevents communication partners being involved in rehabilitation is critical.

Limited research has been completed in an attempt to understand the perspectives of communication partners of people with hearing impairment. A useful extension of existing research is a study to understand the communication partners' perceptions of the facilitators and barriers to their involvement in the audiological rehabilitation. There is no published research where communication partners are asked directly about the facilitators and barriers to them playing a role in the audiological rehabilitation of partners with hearing impairment.

The results of research on communication partners' perceptions of the facilitators and barriers to their participation in audiological rehabilitation will be valuable for a number of reasons. First, communication partners often attend audiology appointments and have a significant influence over partners with hearing impairment (Donaldson et al., 2004). Second, the personal experiences of communication partners about the facilitators and barriers to accessing audiological services are likely to provide new information to supplement the existing research and clinical tools that have already been developed by hearing professionals. Finally, a whānau/family-centred approach is a key element of Māori Health Strategy and greater involvement of communication partners in audiological rehabilitation is consistent with this approach (Manatū Hauora/Ministry of Health, 2014).

1.9 Study Aims and Research Question

This study aimed to identify the facilitators and barriers to communication partner involvement in audiological rehabilitation and I developed a research question to address this goal. Ultimately, this study sought to answer the research question: What are the facilitators and barriers to communication partner involvement in the audiological rehabilitation of a partner with hearing impairment? Communication partners were able to identify relevant facilitators and barriers and the results are summarised in this thesis.

Chapter 2: Method

2.1 Introduction

The purpose of this study was to identify and discuss the facilitators and barriers to communication partner involvement in the audiological rehabilitation of a partner with hearing impairment. The final participants were eight males with hearing impairment and their eight female communication partners recruited from the University of Canterbury Speech and Hearing Clinic, public advertisements in Christchurch libraries, the Christchurch Hearing Association, Life Unlimited, and Hearing Technology clinics. The study design was qualitative. I sourced information from the communication partners through a semi-structured interview. The method used to analyse the interview transcripts was phenomenological analysis. This Chapter will discuss participant recruitment, study design, interview guide development, study implementation, and data analysis.

This study investigated couples because an intimate partner is often one of the most regular and significant communication partners of a person with hearing impairment. To be involved in this study, the participants must have self-identified as a “couple” for at least the past five years and couples must have lived together for at least the past year. This duration of relationship criterion aimed to ensure that the couples had been in a relationship long enough for the communication partner to form a view on the facilitators and barriers to her involvement in audiological rehabilitation of her partner with hearing impairment.

The research focused on the experiences of female communication partners who have male partners with hearing impairment. This design was selected to control for gender as a confounding variable. Studies have revealed that there are gender differences across a range of factors (Croson & Gneezy, 2009). These gender differences may affect a person’s experience as the communication partner of a person with hearing impairment. As all the communication partners were female, this removed gender as a factor that could have

otherwise influenced responses to interview questions. I was interested in identifying themes relevant to hearing impairment and wanted to control for the effect of gender. Statistics New Zealand (2013) found that hearing impairment was more common in men (12%) than women (9%). As a result, this thesis focusing on males with hearing impairment and female communication partners provides information that will help a larger number of people and families who are affected by hearing impairment.

This study only included different-sex couples because research has found that there appear to be important differences in disease-specific and overall quality of life dependent on sexual orientation for older couples who have not sought help from hearing professionals (Kelly & Atcherson, 2011). These differences may also apply to hearing aid owners so only different-sex couples were included to ensure homogeneity of the sample.

This study received ethical approval from the University of Canterbury Human Ethics Committee, New Zealand on 6 May 2016. A copy of the Committee approval is attached as Appendix C. This study was conducted in accordance with the procedures approved by the Committee. Consultation was completed with the Ngāi Tahu Consultation and Engagement Group and a copy of the outcome of that consultation is included in Appendix D. All participants provided written informed consent to their participation.

2.2 Participants

2.2.1 Recruitment.

I developed a process for participant selection. The recruitment process had five key stages: (a) advertising for potential participants, (b) determining whether the partner with hearing impairment met the inclusion criteria and was not excluded, (c) ensuring that the communication partner met the inclusion criteria and was not excluded, (d) conducting the communication partner interview, and (e) the communication partner identifying which facilitators and barriers were relevant for them and not relevant for them.

2.2.2 Advertising.

I did some public advertising to encourage participants to become involved in this study. The advertising flyer in Appendix E was used to invite potential participants to make contact with me. Flyers were placed in a variety of settings to ensure a diverse sample and reduce the risk of bias. The flyers to recruit participants were placed in the UC Speech and Hearing Clinic, the Christchurch Hearing Association, Life Unlimited, Hearing Technology clinics and Christchurch libraries. The Christchurch Hearing Association also included the flyer in its member newsletter in August 2016. It was hoped that a form of snowball sampling would occur as a result of the advertisements (Portney & Watkins, 2008). That is, a male with hearing impairment would see the advertisement and volunteer him and his female communication partner, or a female communication partner would see the advertisement and volunteer herself and her male partner with hearing impairment. Snowball sampling is often used to study personal networks and social relationships (Portney & Watkins, 2008).

I also directly advertised this study to some potential participants and invited them to participate. I posted a copy of the advertising flyer to 100 randomly selected male patients from the University of Canterbury Speech and Hearing Clinic who were between the age of 60 and 80 years. It was hoped that each of these patients would discuss this study with his communication partner and contact me if the couple wished to participate. In addition, I telephoned four couples who were referred to me by Life Unlimited and Hearing Technology telephoned two couples on my behalf and invited them to participate in this study.

2.2.3 Inclusion and exclusion criteria.

The partner with hearing impairment had to be a male aged between 60 and 80 years. This age group was selected because hearing impairment is more prevalent in older people. Kochkin (2009) noted that between 1991 and 2008, the population with hearing impairment grew at the rate of 160% of US population growth, principally as a result of an ageing

American population. A restricted age-bracket (60-80 years) is designed to control for age effects. The upper limit of 80 years is due to the risk of a decline in general health at this age. Older adults are often considered a vulnerable group particularly exposed to diseases and disability and at risk of becoming frail (Ferrucci et al., 2004).

The partner with hearing impairment had to have pure tone air-conduction thresholds ≥ 41 dB HL in two out of four frequencies, 500 Hertz (Hz), 1000 Hz, 2000 Hz, and 4000 Hz, bilaterally to ensure that he had a significant degree of hearing impairment. Temporary conductive hearing impairments were excluded to ensure homogeneity of the sample. A temporary conductive hearing impairment is one where there was an air-bone gap > 10 dB at two or more of the four frequencies (500 Hz, 1000 Hz, 2000 Hz, and 4000 Hz) bilaterally and no audiogram evidencing that the loss was present for at least the last five years. If the hearing impairment was not conductive, then the date of the audiogram was not considered because sensorineural hearing impairment is permanent by its nature. Couples where the male partner had temporary hearing impairment were excluded because they may have had different experiences from those where the partner with hearing impairment had a permanent hearing impairment.

The participant with hearing impairment had to be a hearing aid owner so that he had experienced at least one form of audiological rehabilitation. Experience with audiological rehabilitation was important because this study aimed to identify the facilitators and barriers to communication partner involvement in the rehabilitation of a partner with hearing impairment.

The communication partner had to be female and between the ages of 60 and 80 years. In the same way that it did for the participants with hearing impairment, this age-band controlled for age effects and increased risk of nonhearing-related health issues after age 80 years. The communication partner had to have pure tone air-conduction thresholds of no

more than 40 dB HL at any of the frequencies 500 Hz, 1000 Hz, 2000 Hz, and 4000 Hz. The communication partner was excluded if she had a more significant hearing impairment. This was to ensure homogeneity in the sample and to control for the communication partner's hearing impairment as a confounding variable. It also avoided the interactive effects that hearing impairment from both members of a couple may have (which would be difficult to control). The communication partner must also have self-reported that she was fluent in written and spoken English. The English language fluency requirement was to ensure that the communication partner could participate fully in an interview and the member checking process.

2.2.4 Results of the recruitment process.

A total of 26 couples responded to the recruitment advertising. Of those, one couple was excluded as the partners did not meet the age-related inclusion criteria. Nine couples were excluded because the partner with hearing impairment did not meet the pure tone air-conduction thresholds inclusion criteria detailed in Section 2.2.3. Six couples elected to discontinue participation: Two couples did not wish to continue for personal reasons; one couple could not participate as they were going on holiday during the data collection period; one couple discontinued as the communication partner did not wish to participate; and two couples had one partner experience a deterioration in health. This left 10 potential participants with hearing impairment and their communication partners. Two of the 10 communication partners did not meet the hearing status inclusion criteria detailed in Section 2.2.3 and so were excluded. I interviewed the remaining eight communication partners and all of these communication partners provided written feedback on which facilitators and barriers were relevant to them or not relevant to them. A flow chart illustrating the participant selection process is shown in Figure 4. Recruitment began on 7 May 2016 and sampling occurred until no new significant data emerged from two consecutive interviews (i.e.,

saturation was reached). The final couple who resulted in saturation being achieved were recruited in August 2016.

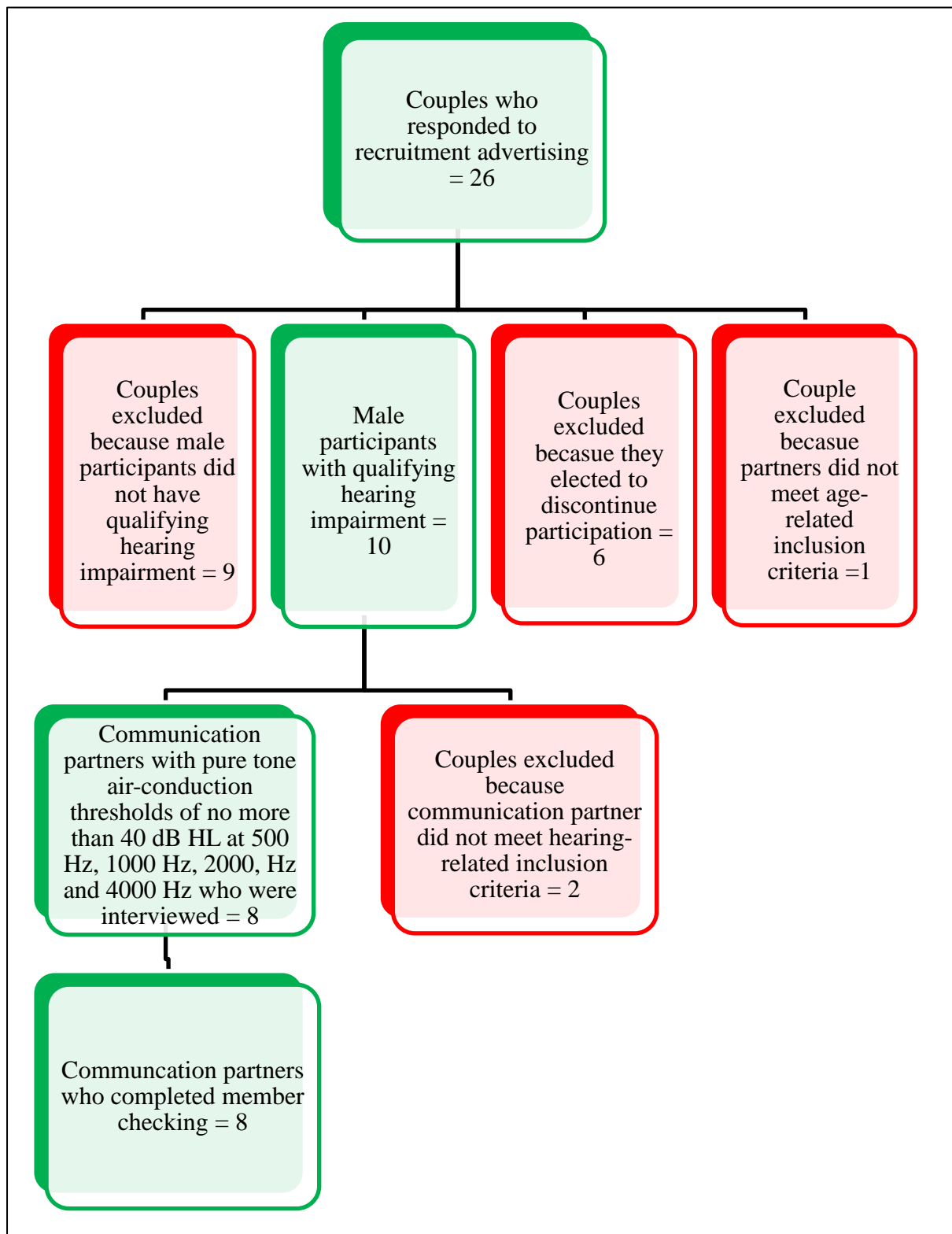


Figure 4. Diagrammatic representation of the participant selection process

2.3 Procedure

2.3.1 Information sheets and consent forms.

Participants with hearing impairment were posted an information sheet about the project, a consent form to participate in the research and a consent form agreeing to the release of their audiological file from their hearing clinic. Participants who were communication partners were posted an information sheet about the project and a consent form to participate in the research. All participants were asked to read the information sheet and sign the consent form to participate in the research. Each participant with hearing impairment was also asked to sign the consent form agreeing to the release of his audiological file from his hearing clinic. The form of the information sheet is set out in Appendix F, the consent form to participate in the research is in Appendix G, and the consent form agreeing to release of audiological file is in Appendix H. Each participant with hearing impairment was asked to return his signed consent forms to me by mail. Communication partners were asked to bring their signed consent form to their hearing test.

2.3.2 Audiogram check for partner with hearing impairment.

I obtained a copy of the audiogram and other audiological records of the partner with hearing impairment from his hearing clinic (with his written consent). The audiograms were recorded by audiologists, audiometrists, or Master of Audiology students working under the supervision of an audiologist.

I used the audiogram and other audiological records to determine whether the partner with hearing impairment met the inclusion criteria. If the partner with hearing impairment did not meet the inclusion criteria, then the couple were excluded from further participation in this study. If the partner with hearing impairment met the inclusion criteria, then I tested the hearing of the communication partner.

2.3.3 Hearing test for communication partner.

All hearing tests for communication partners were completed in sound booths at the University of Canterbury Speech and Hearing Clinic. Hearing tests took place in a Whisper Room Inc SE 2000 series sound isolation enclosure that met ANSI S3.1-1999 (Reaffirmed 2008) (Acoustical Society of America, 1999). A GSI 61 clinical audiometer that was calibrated within the six months prior to this study was used for air- and bone-conduction pure tone audiometry. I used the New Zealand Audiological Society protocols to complete the hearing tests. Pure tone air-conduction thresholds were obtained for 500, 1,000, 2,000, and 4000 Hz via 3A insert earphones or supra aural headphones. Where pure tone air-conduction thresholds exceeded 20 dB HL, bone-conduction thresholds were recorded at 500, 1000, 2000, and 4000 Hz via a Radioear B-71 bone vibrator. Tympanometry was performed on a Clarinet Inventus that was calibrated within the six months prior to this study.

If the communication partner's hearing level was not within the inclusion criteria, then the communication partner did not proceed to an interview. If the communication partner's audiometric thresholds met the inclusion criteria, I conducted an interview with the communication partner.

2.3.4 Semi-structured interviews.

I collected information through a semi-structured interview with the communication partner that lasted approximately 45 minutes to one hour. A semi-structured interview was selected because it enabled me to retain a degree of control over the topics discussed and permitted flexibility in participant responses through the use of open-ended questions (Ayres, 2012). The interviews were conducted in rooms at the University of Canterbury Speech and Hearing Clinic. The interview rooms were private and only the communication partner and I were present at the interview. I made audio-recordings of the interviews using an Olympus Digital Voice Recorder WS-833. These recordings were only accessed by me, the research

supervisor and one Master of Audiology student who reviewed a random sample of three of the eight transcripts of the interviews to ensure that they had been accurately transcribed.

2.3.5 Interview guide.

I developed an interview guide that was used in the semi-structured interviews. I prepared the interview guide after reviewing samples of interview guides used in other qualitative studies. The questions were designed to chart each couple's journey through the hearing impairment of the partner with hearing impairment. There were also some questions about what the communication partner viewed as the facilitators and barriers to her becoming more involved in the rehabilitation of her partner with hearing impairment.

A copy of the interview guide is included as Appendix I. Josselson (2013) recommended that an interview begins with a question that is carefully phrased to acknowledge each participant's experience. My opening question was "Tell me about your journey through your partner's hearing loss." The opening question and subsequent questions were open-ended questions. Rubin and Rubin (2012) and Patton (2015) recommended including open-ended questions in interviews to encourage participants to provide rich and detailed answers.

The first few questions were broad questions that allowed each communication partner to explain her experiences of living with a partner with hearing impairment. I then moved into more focused questions that went directly to my research question of identifying the facilitators and barriers to communication partner involvement in audiological rehabilitation. At the end of the interview, I asked the communication partner participant if there was anything else that she would like to tell me. The aim of a general concluding question was to allow the communication partner to volunteer additional information that she had not had a chance to mention earlier in the interview. I also asked whether she had any

questions about the project to signal my willingness to openly share information about this study.

In addition to the questions on the interview guide, probes, or requests for elaboration can be used to guide the conversation during interviews (Jacobsen, 2017; Josselson, 2013; Patton, 2015). I used a mix of verbal probes asking for elaboration and nonverbal probes, such as nodding, leaning forward to show interest, and waiting for the participant to continue. Some of the interview questions were directed to address the research questions but the interviews were kept conversational in tone to enable the participants to volunteer information about their personal experiences. I used the same interview guide throughout this study, although the questions were not always asked in the same order. Flexibility with the order of questions ensures a more natural flow to the interview (Rubin & Rubin, 2012).

2.3.6 Inducements.

Communication partners were required to travel to the University of Canterbury to complete their interviews. Couples where both partners met the inclusion criteria and the communication partner completed the interview were offered a \$40 petrol voucher. The funding source for the inducement was the Communication Disorders departmental post-graduate research fund. Couples where one or both participants did not meet the inclusion criteria were not offered this inducement. After I completed the interviews with communication partners who qualified to participate in this study, I analysed the data that I had collected.

2.4 Analyses

I tabulated the age, gender, and ethnicity of each member of the eight couples who had both partners meet all the inclusion criteria. Audiometric data was collated to produce a description of hearing status for all participants and an average audiogram for the participants with hearing impairment. I transcribed the interviews word for word and imported the

transcripts into NVivo 11 for analysis. I coded the interview transcripts for facilitators and barriers. After initial coding was complete, I reviewed the data in its entirety and some items were recoded to formulate the final sets of facilitators and barriers. The categorisation process may reveal new insights not gleaned in the initial coding so this process of recoding is common in qualitative studies (Jacobsen, 2017).

Throughout the data analysis, I took a number of steps to increase the credibility of this study. Aspects of this study design that aimed to increase credibility were: (a) independent checking of accurate transcription, (b) reflexivity (achieved through bracketing), (c) triangulation, (d) direct quotations reported in results, and (e) member checking.

A Master of Audiology student, who was not otherwise involved in the research, checked a random sample of three of the eight transcripts to ensure that the interviews were accurately transcribed. The check resulted in only minor changes and no edits of a substantive nature were made to the transcripts. The Master of Audiology student completed the independent cross-check to help ensure the accuracy of the interview data.

Another method that I employed was to reflect on my own role in the research process. Researchers are a key component of their own studies so they cannot be detached from their research (Liamputtong, 2013). Reflexivity is reflecting critically on the self as researcher, the “human as instrument” (Guba & Lincoln, 2005, p. 210). The personal experiences and beliefs of the researcher can influence the findings of the research and it is important that this is acknowledged (Liamputtong, 2013). The credibility of research can be enhanced by explicitly acknowledging the researcher’s personal bias (Mays & Pope, 2000).

One form of reflexivity is bracketing. Bracketing is “trying to set aside the researcher’s beliefs, values, predispositions, and prior assumptions in designing, conducting, and analyzing a qualitative study” (Yin, 2015, p. 333). The theory is that the researcher brackets out any preconceived ideas to identify the true data (Patton, 2015). Complete

bracketing is impossible but it is important for phenomenological studies to understand the real nature of the data (Yin, 2015). In this study, bracketing was achieved through my supervisor and I sharing information about our biases before interviews were conducted and me recording my thoughts after an interview.

The technique of triangulation was also used during data analysis. Triangulation aims to validate a result with evidence from more than one source (Marshall & Rossman, 2011; Yin, 2015). The objective of triangulation is to test for consistency (Patton, 2015). Denzin (1970) suggested that one method of triangulation is to have multiple researchers involved in data analysis. The theory is that if the researchers make the same observations this increases confidence in a finding. After I completed the first two interviews, my supervisor reviewed the transcripts and we discussed additional probes that could be used in subsequent interviews to maximise the information obtained during data collection. My supervisor also reviewed a list of facilitators and barriers and their components that I had identified and the participant quotations that corroborated them. We discussed the facilitators and barriers and their components to reach a consensus.

Another approach that I employed to increase the credibility of this study was use of direct quotations in reporting results. Liamputtong (2013) suggested that verbatim quotations can be used to endorse a researcher's interpretation. Interviewers recording participants' thoughts verbatim helps them to represent the thoughts of each participant accurately rather than the interviewer inferring their own meaning to those thoughts (Yin, 2015).

The final technique that I used to improve credibility was member checking. In member checking, the researcher gives the participant a summary of the results and asks for verification (Marshall & Rossman, 2011; Padgett, 2008). Yin (2015, p. 337) stated that "the 'checking' permits the participants to correct or otherwise improve the accuracy of the study, at the same time reinforcing collaborative and ethical relationships." The theory is that

findings that have been member checked have higher validity (O'Reilly & Kiyimba, 2015). In this study, a member checking table containing the facilitators and barriers and their components was sent to participants who were asked to identify aspects that were relevant for them and aspects that were not relevant for them. A copy of the member checking table is set out in Appendix J. Any communication partner who indicated on her consent form that she would like a copy of her interview transcript was also posted her interview transcript. These participants were given an opportunity to provide corrections to their transcripts. The results that I obtained from using this methodology in this study are set out in Chapter 3.

Chapter 3: Results

3.1 Description of Participants

The demographics of the eight couples who met all the inclusion criteria are displayed in Table 2.

Table 2. *Demographics of participants*

Couple	Participant	Gender	Age (on 6.05.16)	Ethnicity	Hearing status
1	1	Male	69	European	Moderately-severe (right) and severe (left) sloping to profound sensorineural hearing impairment
	2	Female	75	Irish	No more than a mild hearing impairment at 500, 1000, 2000, or 4000 Hz
5	9	Male	76	European New Zealand	Normal hearing sloping to a moderate to moderately-severe sensorineural hearing impairment (right) and slight sloping to profound sensorineural hearing impairment (left)
	10	Female	76	NZ European	No more than a mild hearing impairment at 500, 1000, 2000, or 4000 Hz
6	11	Male	66	Not specified	Normal hearing sloping to a severe sensorineural hearing impairment bilaterally
	12	Female	61	European	No more than a mild hearing impairment at 500, 1000, 2000, or 4000 Hz
8	15	Male	72	Not specified	Normal hearing sloping to a moderately-severe to severe sensorineural hearing impairment (right) and profound sensorineural hearing impairment (left)

	16	Female	69	NZ	No more than a mild hearing impairment at 500, 1000, 2000, or 4000 Hz
11	21	Male	71	New Zealander	Mild sloping to profound sensorineural hearing impairment bilaterally
	22	Female	62	European	No more than a mild hearing impairment at 500, 1000, 2000, or 4000 Hz
15	29	Male	70	European (NZ)	Mild sloping to a moderately-severe to severe sensorineural hearing impairment bilaterally
	30	Female	68	New Zealand	No more than a mild hearing impairment at 500, 1000, 2000, or 4000 Hz
17	33	Male	79	European	Mild sloping to moderately-severe sensorineural hearing impairment bilaterally
	34	Female	66	Pakeha	No more than a mild hearing impairment at 500, 1000, 2000, or 4000 Hz
18	35	Male	74	Not specified	Moderate to moderately-severe sloping to severe to profound sensorineural hearing impairment bilaterally
	36	Female	68	European	No more than a mild hearing impairment at 500, 1000, 2000, or 4000 Hz

An average audiogram prepared from the individual audiograms of the partners with hearing impairment is displayed in Figure 5. Where a participant's audiogram indicated that no response could be obtained at high thresholds, a threshold of 120 dB HL was used because there was no measureable hearing at that frequency.

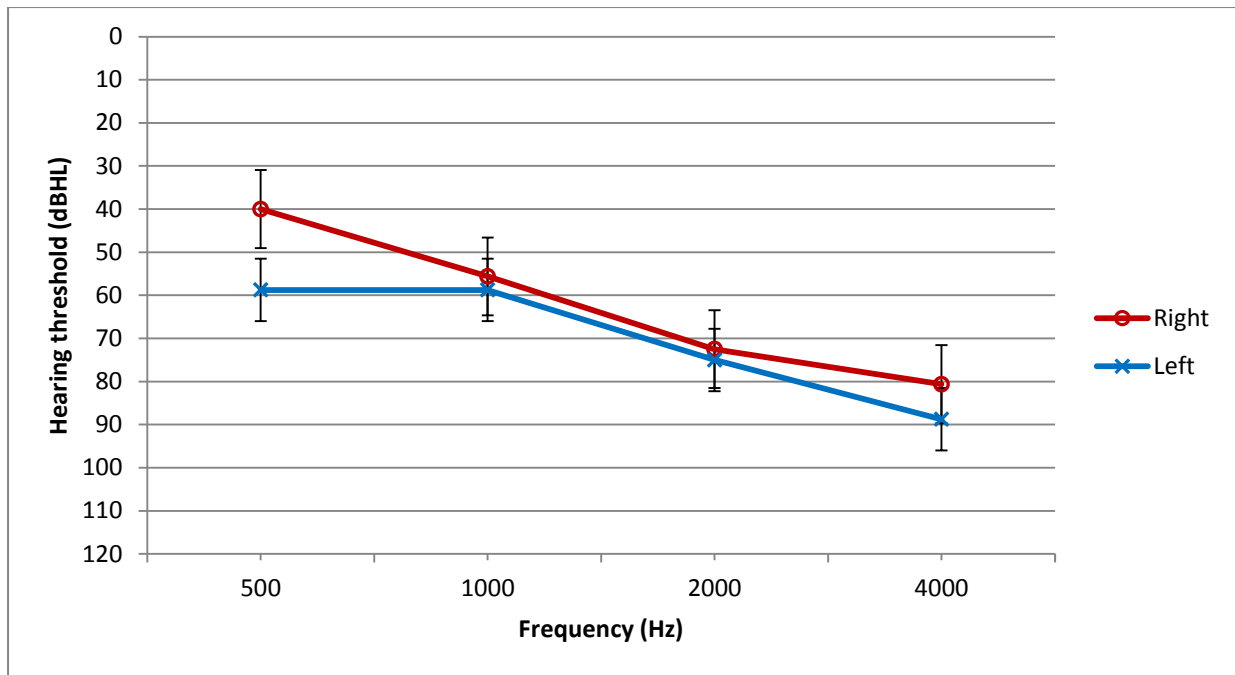


Figure 5. Mean audiogram with standard error bars for partners with hearing impairment

According to the scale of Goodman (1965), the degree of hearing impairment can be classified as a mild sloping to severe hearing impairment in the right ear and a moderately-severe sloping to severe hearing impairment in the left ear. The sloping configuration of the hearing impairment is consistent with what is expected for age-related hearing impairment in males (Demeester et al., 2009). The degree of hearing impairment is reflective of the hearing impairment criteria for partners with hearing impairment (pure tone air-conduction thresholds ≥ 41 dB HL in two out of four frequencies 500 Hz, 1000 Hz, 2000 Hz, and 4000 Hz, bilaterally).

3.2 Field Notes

Each communication partner easily recounted her experience of living with a partner with hearing impairment. Communication partners required some prompting to identify facilitators and barriers to their involvement in audiological rehabilitation. Some communication partners initially perceived that there were no barriers but further probing led to them discussing perceived barriers.

Topics raised by communication partners sometimes covered sensitive relationship matters. Some communication partners struggled with this and Participant 34 expressed that sentiment as *“I’m sort of feeling kind of a bit disloyal being so open and honest about it. Which I think I am being but I just feel uncomfortable about it.”* Another participant appeared to seek reassurance by asking whether others had experienced similar emotions that could be viewed as socially undesirable: *“And do others get frustrated?”* (Participant 22).

3.3 Naïve Reading

An initial naïve reading of the communication partners’ transcripts revealed that they had diverse experiences. There were individual differences in what communication partners perceived as facilitators and barriers. There were instances where something was a facilitator to one communication partner and a barrier to another. A striking example of this was that Participant 34 found that a magnet with communication strategies on it on the fridge *“really helpful”* but Participant 22 commented that her partner putting information on communication strategies on the fridge made her feel a *“wee bit angry or frustrated inside.”* To some extent, the particular dynamics of each couple’s broader relationship influenced the communication partner’s level of involvement in the audiological rehabilitation of her partner with hearing impairment. Although there was individual variation, some common facilitators and barriers also emerged.

3.4 Thematic Structural Analysis

Six facilitators and nine barriers emerged from the interviews, some with multiple components to them. In the direct quotations of communication partners reproduced in this thesis, pauses were indicated by an eclipse (...), discontinuities in the transcript were identified with an eclipse in square brackets ([...]), and clarifying words were added in square brackets. To ensure confidentiality was maintained, the names of partners with hearing impairment were replaced with an X. Organisations names were replaced with a generic

description of the organisation in square brackets and specific hearing aid technologies were replaced with a generic description of the technology in square brackets. The facilitators and barriers identified from the interviews are discussed in sections 3.5 and 3.6.

3.5 Facilitators

Six facilitators emerged from the interviews and some of these facilitators could be further broken down into two components. The facilitators and, where relevant, their components are shown in Table 3.

Table 3. *Facilitators to communication partner involvement in audiological rehabilitation*

	Facilitator and components	Number of participants who raised facilitator (or component) at interview	Number of participants who raised facilitator (or component) in member checking
1	Influence of others who play an important part in the life of the partner with hearing impairment	7	7
2	Interactions with hearing professionals	5	3
	• Attending audiology appointments	5	4
	• Hearing professionals providing specific instructions	2	1
3	Communication partner willingness to be involved	6	8
	• Communication partner motivation to help	3	8
	• Communication partner providing practical support	5	7
4	Receiving support from partner with hearing impairment	2	6
5	Rehabilitation strategies	5	5
	• Assistive devices	4	6
	• Communication strategies	4	7
6	Partnership	3	7

3.5.1 Facilitator 1: Influence of others who play an important part in the life of the partner with hearing impairment.

In the interviews, seven communication partners viewed other family members, close friends, or employers as having an influence over their respective partners with hearing impairment. These people often had similar views to the communication partner about the severity of the hearing impairment and the need to seek help. They shared these opinions either (a) directly with the partner with hearing impairment or (b) with the communication partner who relayed them to the partner with hearing impairment. The partner with hearing impairment is influenced by the opinions of other people who play an important role in his life.

Participant 2 commented that her sons helped her motivate her partner with hearing impairment to consult for hearing services. She explained her sons' roles *"... we've got two sons and they as well would say 'Dad, you're deaf.' 'Dad, you're not listening to us'. And I think a lot of that helps as well [...] Cause he realised as well it wasn't just me."* The employer of Participant 2's partner also raised concerns about her partner's hearing with her and she then discussed these with her partner. She commented on the role that others played in encouraging her partner to acknowledge his hearing impairment *"It needs somebody other than the people closest to you to start noticing and saying things and then I think maybe that makes the person realise that there is a problem."*

Participant 12 noted her partner's sister encouraged him to get hearing aids. She commented on the effect of her persuasion *"I think it has a very positive influence on him [...] her and him get on very well [...] I don't think it completely overruns him, he still makes the choice himself but I think when she sort of talks to him he does sort of listen more [...] Yeah and so I think that that's my little ally really."*

3.5.2 Facilitator 2: Interactions with hearing professionals.

During the interviews, five communication partners indicated that they thought that interactions with hearing professionals helped them to understand their respective partners' hearing impairment and improve communication. There were two components to interactions with hearing professionals: attending audiology appointments and hearing professionals providing specific instructions.

3.5.2.1 Attending audiology appointments.

Five communication partners commented at the interviews that they found attending audiology appointments enabled them to understand more about their respective partners' hearing impairment. Participant 2 attended her partner's cochlear implant audiology appointments but did not attend any audiology appointments when her partner had hearing aids. On her experiences with the cochlear implant programme, she commented that *"I think the most important thing for me is going along when he has his meetings with them ... And they always ask me is there anything or any problems or anything I want to ask [...] And I feel it's quite nice because then I know what's going on as well."*

Participant 22 did not regularly attend audiology appointments with her partner but her partner asked her to be present at one particular appointment. She mentioned that during the appointment they tested her voice and demonstrated that it was at a frequency that was difficult for her partner to hear. When reflecting on the appointment, she mentioned that it was a catalyst for her acknowledging the effects of her partner's hearing impairment *"I think he needed me to go along to realise that there was a problem [...]."*

For Participant 16, attending an audiology appointment resulted in a referral to a hearing therapist who gave her helpful information to use when communicating with her partner with hearing impairment. Participant 36 found that confirmation from an audiologist of her views on hearing protection helped her to influence her partner. She commented "...

when he was using the chainsaw he didn't used to wear hearing protectors so he used to say 'my hearing's no good anyway.' And I said 'no, but you don't want to damage what you've got.' So the next time we went to the audiologist I said 'should he be wearing hearing protection?' and she said 'yes, of course he should.' So that ... that was good because she said it so he took notice [...]."

Only Participant 2, whose partner was on the cochlear implant programme, commented that audiologists actively encouraged her to attend appointments. She discussed the contrast between not attending hearing aid appointments and yet attending every appointment once her partner received a cochlear implant *"But as soon as he started on the implant one I was at everything [...] They encourage you to be there [...] They always said that you are welcome to come along all the time and I just went along and I noticed that nearly all the people in the waiting room were all couples."*

3.5.2.2 Hearing professionals providing specific instructions.

In the interviews, two communication partners mentioned that hearing professionals providing them with specific instructions helped them to work with their respective partners to improve communication. Participant 16 spoke about her experience with hearing therapy *"[...] she just rang up and she said come along and she just gave us a few tips. The main thing was Walk the Talk [...] instead of yelling out to him across the room I have to go up to him and talk."* Participant 2 was given some exercises to complete with her partner following cochlear implantation. She recalled details of the exercises and noted that she became involved in her partner's hearing rehabilitation because hearing professionals gave her clear guidance *"Because they told me what to do [...] And how to do it."*

3.5.3 Facilitator 3: Communication partner willingness to be involved.

During the interviews, six communication partners commented on their willingness to assist their respective partners with hearing impairment to manage their health condition.

There were two components to communication partner willingness to be involved: communication partner motivation to help and communication partner providing practical support.

3.5.3.1 Communication partner motivation to help.

Three communication partners openly discussed in the interviews their motivation to help their respective partners with hearing impairment improve their hearing. When asked about attending audiology appointments Participant 22 said *“If it helped him I would have.”* On her motivation to improve her partner’s hearing, Participant 30 commented *“Well yes I would if we could but I don’t think we can improve it, unfortunately.”*

3.5.3.2 Communication partner providing practical support.

In the interviews, five communication partners mentioned that they were involved in rehabilitation through providing various forms of practical support to their respective partners with hearing impairment. Participant 22 attended medical appointments to help her partner ensure that he heard all the relevant information. She commented that *“[...] especially medical appointments he has said that it’s really important that I am there so that I hear things that he might miss and [...] so he has said to me ‘I’m really glad that you were there’.”* Participant 12 brought her partner’s hearing aids into work when he had forgotten them commenting *“So I had to take them in and obviously he said I can’t take part because I can’t hear.”* Participant 10 thought that one way she could increase her involvement in her partner’s audiological rehabilitation was to help him to remember to take a supply of batteries when they go away on holiday *“Well I suppose it would mean reminding them when we are going away ‘Have you got plenty of batteries?’”*

3.5.4 Facilitator 4: Receiving support from partner with hearing impairment.

During the interviews, two communication partners commented that their respective partners with hearing impairment were supportive of their involvement in audiological

rehabilitation. Participant 22 commented *“So X probably has made me aware of those sorts of things and [...] he always tells me how important [...] hearing is [...].”* Participant 10 noted that her partner was supportive of her participation in his hearing rehabilitation *“X was quite happy for me to come with him to the clinic [...] And he always tells me how he gets on when he has to come back or ... I have gone with him when he had his wax removed.”*

3.5.5 Facilitator 5: Rehabilitation strategies.

Five communication partners noted in the interviews that various rehabilitation strategies helped them to manage the impact of hearing impairment. There were two components to rehabilitation strategies: assistive devices and communication strategies.

3.5.5.1 Assistive devices.

In the interviews, half the communication partners mentioned that assistive devices helped reduce the impacts of hearing impairment on the couple. Participant 2 commented *“But he’s got a thing now that’s amazing. He can have the TV on and have it as loud as he likes and I can’t even hear it [...] That’s marvellous.”* Participant 22 noted that an assistive device aided communication *“X’s tried [...] various things like he’s got a pen that I can put around my neck and things like that that he’s gone and got himself [...] I’ve worn it or otherwise he’s put it on the table.”* Participant 34 commented that her partner using ear phones to listen to the TV has *“[...] made a big difference to his involvement in life [...] he can be watching TV and I can be doing some marking.”*

3.5.5.2 Communication strategies.

During the interviews, half of the communication partners noted that communication strategies sometimes helped them to communicate more effectively with their respective partners with hearing impairment. Participant 22 commented that *“[...] and then there were things other things that I had to learn to understand were, you know, like I had to face him or don’t talk to him when he had his back turned to me and things like that.”* Similarly,

Participant 30 commented that *“I have learnt not to call out from another room [...] I think that was the biggest thing [...] I mean, you know, a lot of the arguments are over the fact that you’re trying to do something that they’re not capable of, you know, talking to them from another room, talking to their back.”* Participant 34 commented that *“[...] we’ve got a wee thing on the fridge a little magnet square thing and it says [...] look at me, get my attention [...] don’t talk from the other room [...] and that was really helpful [...] you need to be aware ... people don’t know how to be aware ...”* She had also developed her own strategy of clapping to attract her partner’s attention in the supermarket if calling out does not work *“he knows to look around if he hears a clap.”* Participant 36 commented that written reminders of communication strategies were useful because *“it reminds you to do it because you forget, you get lazy.”*

3.5.6 Facilitator 6: Partnership.

In the interviews, three communication partners commented that working together in partnership or as a team helped them to be part of the process of improving communication in the relationship. Participant 36 said *“And then we’ve got a good relationship so we can work it out but if you haven’t got such a good relationship then it would be another barrier.”* Participant 12 noted that *“It’s just about working in partnership and that’s what you’ve got to do.”*

3.6 Barriers

Nine barriers were identified from the interviews and some of these barriers could be further broken down into components. The barriers and, where relevant, their components are shown in Table 4.

Table 4. *Barriers to communication partner involvement in audiological rehabilitation*

	Barrier and components	Number of participants who raised barrier (or component) at interview	Number of participants who raised barrier (or component) in member checking
1	Challenges arising from interactions with acquaintances and people who are unknown to the couple	4	7
2	Lack of interactions with hearing professionals	4	3
	<ul style="list-style-type: none"> • Communication partner perceives no benefit in attending audiology appointments • Audiologists not actively encouraging communication partner involvement 	4	2
		4	5
3	Partner with hearing impairment	5	2
4	Communication partner concern about the impact of her own challenges on the partner with hearing impairment	3	3
5	Limitations of rehabilitation strategies	7	6
	<ul style="list-style-type: none"> • Limitations of assistive devices • Practical limitations of communication strategies • Partner choosing to limit hearing aid use • Practical limitations of hearing aids 	5	5
		5	7
		4	5
		3	5
6	Inexperience with hearing impairment and hearing aids	5	5
7	Gradual nature of hearing impairment	7	7
8	Relationship dynamics	7	3
	<ul style="list-style-type: none"> • Partners placing a high value on independence • Hearing impairment creates a non-win situation 	6	4
		6	2
9	Work commitments	4	3

3.6.1 Barrier 1: Challenges arising from interactions with acquaintances and people who are unknown to the couple.

In the interviews, four communication partners suggested that interactions with acquaintances and people who are unknown to the couple were a challenge due to their lack of awareness of hearing impairment. Participant 2 noted that discussing her partner's hearing impairment with people who did not know her well could be challenging *"Well it takes quite a bit of explaining and reasoning why it happens"* and ... *"If they had nothing to do with anybody who was ever deaf they would probably think maybe she's making it up [...]."* Participant 22 viewed the hidden nature of hearing impairment as being problematic when her partner was interacting with people whom he did not know *"... I suppose when you meet people you don't have a badge to say [...] I can't hear properly or anything, so people don't know really. Cause for little hearing aids sometimes you don't even see them nowadays do you?"*

Participant 16 was concerned about what other people would think of her when she asked to move to a quieter table in a restaurant so that her partner could hear her better *"[...] cause I looked at these people and they probably thought that I was being a bit snobby or something."* Participant 36 noted her frustration at the way customs personnel interacted with her husband *"[...] he couldn't hear and I was so cross because the woman spoke to him as if he was dumb but it was because he couldn't hear."*

3.6.2 Barrier 2: Lack of interactions with hearing professionals.

Half of the communication partners stated in the interviews that limited opportunity to interact with hearing professionals and to seek their advice was a barrier. There were two components to lack of interaction with hearing professionals: communication partner perceives no benefit in attending audiology appointments and audiologists not actively encouraging communication partner involvement.

3.6.2.1 Communication partner perceives no benefit in attending audiology appointments.

During the interviews, half of the communication partners acknowledged that there were times when they did not attend audiology appointments because they thought that attending would not make any difference. Participant 22 queried whether she needed to attend “[...] I don’t know if it was required of me to go.” Participant 30 relied on her partner to relay information to her “I’ve just never, never bothered. Which probably sounds awful but I’ve just taken what he’s said from gospel – this is what happens and that’s what he’s got and accepted it.” Participant 2 explained her absence at hearing aid-related appointments “Well I don’t think [...] it was going to help me much for the simple fact that when he was going something had gone wrong with his hearing aid and it had to be sorted out and I didn’t think [...] that it was going to make any difference.” Participant 36 commented that in the early stages of her partner’s hearing impairment she could have attended if needed “But I didn’t think I really needed to at that stage. It wasn’t so bad. I mean it got worse over time.”

3.6.2.2 Audiologists not actively encouraging communication partner involvement.

In the interview, half of the communication partners mentioned that audiologists did not actively encourage them to attend or actively participate in audiology appointments and it would have been preferable if this had occurred. Participant 22 commented “[...] the places that he went never said that I had to be part of it [...] maybe they could have said well look [...] it’s important that your partner comes along, is a part of it and understands what’s happening [...].” Similarly, Participant 30 said “Perhaps if they’d said to him at [audiology clinic] ‘you know it would help if we spoke to your partner about your hearing disability and um explain to them, you know, how it affects you and what they can do to make life easier for you’ [...].” She added “[...] perhaps there could be more information for ... for the partner ... I mean I don’t know do they have pamphlets that they give out? [...].” When asked whether there was interaction with her at audiology appointments, Participant 36 said “No

not really ... but I mean it's pleasant but not really but I mean most of the time I just sit there [...]." She commented that on hearing professionals' services "*... all that's cared for is the physical side of how does the hearing aid work ... there's nothing about how are you going to cope with this situation.*"

3.6.3 Barrier 3: Partner with hearing impairment.

Five communication partners commented in the interviews that at times their respective partners with hearing impairment were a barrier to their involvement in audiological rehabilitation. Participant 30 said "*No. He doesn't really talk about it. He doesn't really talk about his hearing. He just says, you've got to realise I don't hear.*" She also noted that her partner was unlikely to want her to attend audiology appointments "*I don't think he'd want me there, I've never asked. No, I don't think he'd want me to go.*" Participant 12 openly acknowledged her partner as a barrier "*I think it's only X [...] he can be a barrier.*" Participant 34 commented that a barrier was "*[...] the fact that he was refusing to admit to himself that it was a problem.*" Participant 36 mentioned that she wanted to go on a course for couples affected by hearing impairment but her partner was "*not terribly keen.*"

3.6.4 Barrier 4: Communication partner concern about the impact of her own challenges on the partner with hearing impairment.

During the interviews, three communication partners were concerned about their own challenges, disability or limitations having an impact on their respective partners with hearing impairment and viewed this as a more significant issue than the hearing impairment. Participant 30 said "*[...] I know I don't speak terribly loudly which doesn't help so perhaps I need to go to a speech therapist. Well you know actually I've seriously considered it but whether it would do any good I don't know.*" Participant 10 (who had a vision impairment) commented "*And, if anything, they are needed more. Of a blind person ... a spouse or*

partner of a blind person is needed more.” Participant 12 said “I am probably more the drag on him than he is on me [Laughs]. And I can hear and I’m younger.”

3.6.5 Barrier 5: Limitations of rehabilitation strategies.

In the interviews, seven communication partners identified limitations with various rehabilitation strategies. Rehabilitation strategies sometimes helped but there were also challenges in implementing them. There were four components to limitations of rehabilitation strategies: limitations of assistive devices, practical limitations of communication strategies, partner choosing to limit hearing aid use, and practical limitations of hearing aids.

3.6.5.1 Limitations of assistive devices.

In the interviews, five communication partners identified problems with assistive devices, which did not provide as much support as they would have liked. Three communication partners mentioned that TV streamers were a barrier to conversation; two communication partners mentioned that remote microphones did not always meet their needs and two communication partners discussed the limitations of loop systems. Participant 22 said *“I mean when he hooked onto that [TV streamer] sometimes he’s concentrating into that [...] that if I did go to talk to him, he’s not hearing that I’m there.”* Participant 16 mentioned that *“If we are watching TV he puts on a [...] I don’t know what they’re called but they are from [audiology clinic] but once that’s on he would not hear me talking, there might be something that you want to comment on but it’s just a waste of time [...].”* Participant 30 said *“You know the [remote microphone] ... they said ‘oh if you put it on the table when you’re out at dinner you will hear better but I think it just picks up everybody and makes it worse. So he doesn’t use it there.”* Participant 34 noted that *“... we were in a movie once and X got [...] the adjoining movies feeding into his ear phones as well.”* Participant 36 mentioned that some loop systems work brilliantly and others do not appear to work particularly well.

3.6.5.2 Practical limitations of communication strategies.

Five communication partners mentioned in the interviews the practical limitations of communication strategies. It was not always practical for them to use communication strategies as in daily life the couple were often in different rooms or moving around.

Participant 2 discussed the results of her partner's cochlear implant *"[...] but I honestly don't know if I can say that it's been a great help to me [...] I think from the fact is you have to be looking at the person and you've got to be standing in front of them or sitting in front of them."* Participant 16 said *"No, it's a serious thing in your life you really have to go to the person to talk in front of them and a normal couple you're not doing that, you're in the car well he wouldn't hear anything in the car. It's really changed communication in a big way."*

Participant 36 commented that it was not always practical to stand and look at each other *"when you're bundling around in the house, you're not looking at each other [...]"*.

3.6.5.3 Partner choosing to limit hearing aid use.

During the interviews, four communication partners commented that there had been times when their respective partners choosing not to wear hearing aids restricted the couples' ability to communicate. Participant 30 said *"But um of course he wouldn't wear hearing aids. Like a lot of people when they know they have to wear them ... but he didn't want to wear them. He'd only wear it in one ear. 'I only need it in that left ear.' And I said 'well they have given you two I think you need two.'"* Participant 12 commented that the TV was often excessively loud because *"[...] he doesn't wear his hearing aids all the time [...] I just think he feels comfortable at home [...] He doesn't need to hear because he knows that I hear."*

Participant 34 commented that her partner's newly acquired hearing aids sat in the cupboard for at least a year after purchase and then he only used them when he was going out. She told him *"[...] I need them at home. I need them for us at home."* She commented that *"[...] it bothered me that he would be not wearing his hearing aids, he would only put them on when*

he wanted to go out [...] I felt that it wasn't [...] as important [...] for him to be hearing me it was more important for him to be hearing everybody [...] Life out there." Participant 34 also commented that her partner did not put his hearing aids in until 11 o'clock in the morning and *"[...] there's a bit of discussion and life that goes on before 11 o'clock [...] I'm trying to actually educate him into putting them in earlier."*

3.6.5.4 Practical limitations of hearing aids.

In the interviews, three communication partners commented that it was impractical for their respective partners with hearing impairment to wear hearing aids when their ears were sore or overnight and this restricted the couples' ability to communicate. Participant 22 said *"Oh there's the odd time that he hasn't had his hearing aids in [...] It might be because his ear's sore or something [...] and I know he's not hearing me. And I'll say 'you should have your hearing aids in'."* Participant 16 said *"It's probably the worst thing at night when he takes them out and doesn't hear a thing cause you know how you chatter ... it's all gone until he puts them in in the morning after his shower."*

3.6.6 Barrier 6: Inexperience with hearing impairment and hearing aids.

Five communication partners commented in the interviews about their inexperience with hearing impairment or hearing aids prior to meeting their respective partners with hearing impairment. Participant 22 said *"[...] if I hadn't met X I wouldn't really have had much knowledge."* Participant 16 explained what happened at her hearing therapy appointments *"But she just, you know, gave me a few little tips and, you know, um which I should have known ..."* Participant 16 commented that she had not really experienced anyone deaf in her life noting that *"I've avoided them perhaps. [Laughs]. That sounds awful. Well you know what I mean [...] if you're next to someone whose deaf you wouldn't ... actually this is terrible ... choose to sit next to them really unless you know them very well because, you know, there won't be much communication."*

3.6.7 Barrier 7: Gradual nature of hearing impairment.

In the interviews, seven communication partners commented that as a result of the gradual nature of hearing impairment it took their respective partners with hearing impairment some time to acknowledge the hearing impairment and seek help. Participant 2 said “[...] *it’s gradual and when that happens you don’t notice it so much because, you know, it’s a downhill thing and you don’t realise how bad it was.*” Participant 34 made the analogy with “[...] *watching a clock or watching a child grow it’s only over [...] a space of time [...] they’re taller or there’s less [...] I can’t hear as much as I used to. I used to be able to hear on the phone but now I can’t [...] because it’s incremental for him he wasn’t aware of it going off [...].*” Participant 10 mentioned that “*It was quite a few years before we ... well he could be talked into getting a hearing aid.*”

3.6.8 Barrier 8: Relationship dynamics.

During the interviews, seven of the communication partners revealed that sometimes the dynamics of the relationship as a whole prevented them from becoming more involved in the rehabilitation of their respective partners with hearing impairment. There were two components to relationship dynamics: one or both partners placing a high value on independence and hearing impairment creates a non-win situation.

3.6.8.1 Partners placing a high value on independence.

In the interviews, six communication partners commented that their respective partners were independent and some indicated a preference for their partners to look after their hearing health independently. Participant 10 commented that “*I think everybody needs to be as independent as possible to manage [...] Not to be too reliant. That’s the thing I think that’s important.*” Participant 22 mentioned that “*And probably X didn’t want to be a burden with me. It was a problem that he had and he was trying to get it fixed [...] No X’s pretty independent.*” Participant 2 wanted her partner to retain as much responsibility as possible

“No, and I also think it was a good thing because I think sometimes, especially men, if you help them, they sort of, before you know where you are you are going to be doing it all. And I think it much better that he was doing it all himself.” Participant 36 noted her partner’s responsibility for resolving issues relating to his hearing impairment but also acknowledged the impact on others *“It’s just it was X’s problem and he was sorting it but it involves everyone in the home as well.”*

3.6.8.2 Hearing impairment creates a non-win situation.

Six communication partners mentioned in the interviews that their respective partners sometimes resisted their attempts to become involved with their hearing and this could cause conflict in the relationship. Participant 22 said *“I think that I’m talking to him clearly and he will say, you know, ‘I can’t hear you’ or things like that. You get sort of like [sigh], [sigh] I’m trying to talk like you want me to.”* She also mentioned that she was frustrated about her partner putting information about communication strategies on the fridge *“I suppose even when I first saw the thing on the fridge it was like [sigh]. You put that thing up on the fridge. It was a wee bit [...] Made me you think, oh you know, you were a wee bit angry or frustrated inside.”* Participant 30 mentioned that her opinions on matters relating to her partner’s hearing aids were unwelcome *“... I said ‘don’t you think you need them turned up a bit?’ and he gets quite cross if I suggest that. He says ‘oh well, they know at [audiology clinic] how loud I should have them or whatever.’ So maybe they do.”* Participant 12 said *“... see it’s a not win situation because if I say to him ‘X have you got your hearing aids on?’ He’d get annoyed with me too much by saying that because he’d say ‘look they’re my hearing aids, I know when I need them, don’t you keep going on to me.’ So it’s a non-win situation [...] I can feel like I’m overdoing it and he can feel like I’m at him all the time and I can’t see how we can win.”*

3.6.9 Barrier 9: Work commitments.

During the interviews, half of the communication partners mentioned that work commitments made it difficult for them to attend audiology appointments. Participant 2 said that she did not attend appointments because “[...] *I might have been at work in the morning. I used to work some mornings. And he always fitted it in with his work time [...] So I never did.*” Participant 22 commented on the reason that she did not attend audiology appointments “[...] *and maybe because I was busy in my previous job that I did that he didn’t ask me. I don’t know.*” Participant 34 commented “*When you’re teaching five hours a day it’s a little difficult to just [...] take a short sort of couple of hours ... an hour ... whatever it’s going to take [...] You end up having to lose the whole day. So that ... that was a bit of a barrier I think.*” Participant 36 said that “[...] *he did go to the audiologist on his own at the beginning because I was working [...].*”

Although working made attendance at audiology appointments difficult, some of the communication partners commented that working did not make it impossible to attend. Participant 22 commented that in her previous job that she had held during the course of her partner’s hearing impairment “[...] *I was probably more flexible in the times that I could have got off to go whereas in this job it’s probably harder for me to just take time to go somewhere.*” Participant 36 said “*But I could have taken time off but I wasn’t working where it was impossible to [...].*” Participant 2 commented that she worked mornings but did not address that audiology clinics were also open afternoons and whether there was the possibility of attending an afternoon appointment with her partner.

3.7 Relationship between interview coding and member checking

On average, there was good agreement between the interview coding and the member checking. The results of some measures of agreement between the two data sources are displayed in Table 5. In the majority of instances, the coding of the interview transcript

matched the member checking result. A matching result occurred if facilitators or barriers that were present in the transcript were identified as relevant by the communication partner (true positive responses) or facilitators and barriers that were absent from the transcript were identified as not relevant by the communication partner (true negative responses). Items being coded in the interview transcripts as a facilitator or a barrier when the communication partner did not think that the facilitator or barrier was relevant for them in member checking were considered false positive responses. The rate of false positive responses was higher for barriers (23.5%) than facilitators (8.3%). There were a number of instances where facilitators and barriers were not present in the interview transcripts but the communication partner identified them as relevant for them in the member checking (i.e., responses raised only in member checking).

Table 5. *Level of agreement between interview coding and member checking*

	True positive and true negative responses	Responses raised only in member checking	False positive responses
Facilitators	64.6%	27.1%	8.3%
Barriers	59.6%	16.9%	23.5%

Chapter 4: Discussion

4.1 How Results Answered the Research Question

The results of this study suggest that there are a series of facilitators and barriers to communication partner involvement in audiological rehabilitation. These facilitators and barriers are listed in Tables 3 and 4. The facilitators and barriers are diverse in nature. There is also a degree of individual variation in the results. All facilitators and barriers did not apply to every communication partner, although each of the facilitators and barriers were common to multiple communication partners. The results indicate that there are some shared experiences but there is also some diversity of lived experience. My results are consistent with previous research and also uncover some new information. There is limited literature on the role of communication partners in audiological rehabilitation but I examined the results of this study in the context of that literature.

4.2 Results in Relation to Literature.

4.2.1 Audiologists' perceptions of communication partner role in rehabilitation.

Meyer et al. (2015) completed an investigation into audiologists' perceptions of the factors affecting family member involvement. Some of the audiologists' perceptions are substantiated by this study but, on some factors, communication partners had a different perception.

This study reinforces the audiologists' perception that there can be a mismatch between a partner with hearing impairment and a communication partner's perceptions of the level of hearing and associated problems. Communication partners reported that the gradual nature of hearing impairment meant that their respective partners took some time to acknowledge the extent of the hearing impairment and seek help. Both studies corroborate the theory that people with hearing impairment and their communication partners may have

different perceptions of the degree of hearing impairment and its effects on family relationships.

This study reinforces audiologists' perceptions that family dynamics play a role in communication partner involvement in the rehabilitation of a partner with hearing impairment. Working together in partnership or as a team helped the communication partners to be part of the process of improving communication in the relationship. The two studies bolster the view that family support can (at least at times and for some couples) be a facilitator to communication partner participation in audiological rehabilitation.

Relationship dynamics were also a barrier as some communication partners in this study acknowledged that sometimes the dynamics of their relationship as a whole prevented them from becoming more involved in hearing rehabilitation. More specifically, couples' desires to remain independent and partners with hearing impairment sometimes resisting communication partner attempts to become involved were barriers. The relationship dynamics barrier is consistent with some of the audiologists' observations in the study by Meyer et al. (2015), who said that tension and frustration within a relationship can be barriers to communication partner participation in audiological rehabilitation. Both studies acknowledged that some aspects of a couple's broader relationship can be facilitators but other aspects can be barriers.

This study also shows that audiologists and communication partners have different perceptions on some factors affecting family member involvement. Audiologists generally believed that they encouraged family member involvement in hearing care appointments. This study suggests that communication partners are of the view that audiologists did not actively encourage them to attend or actively participate in appointments and it would have been preferable if this had occurred. Audiologists encouraging communication partners to attend appointments and be active participants during the sessions is important because some

of the communication partners in this study indicated that they perceived no benefit in attending audiology appointments. However, for some communication partners who were present at audiology appointments, attendance was a facilitator to their participation in audiological rehabilitation. Communication partners may be receptive to encouragement from audiologists to attend appointments as most communication partners in this study indicated that they were willing to help to manage the hearing impairment. New information on communication partner perceptions of audiologists' services presents an opportunity for audiologists to review their practices when working with communication partners. Some changes may be necessary to ensure that audiologists' intentions to encourage family member involvement are converted into actions that are perceived by communication partners as being welcoming and inclusive.

There was one notable exception to the theme that audiologists did not actively encourage communication partner involvement in audiology appointments, and that was the view of Participant 2 who was the only participant whose partner with hearing impairment had a cochlear implant. She did not attend audiology appointments related to hearing aids but commented that she had attended (and was encouraged to attend) audiology appointments as part of the cochlear implant programme. It is possible that there is a difference between communication partners' experiences when people with hearing impairment have hearing aids as opposed to cochlear implants. To determine whether the difference is able to be generalised to a wider population would require further research in a sample of couples where the partner with hearing impairment is a cochlear implant recipient.

Audiologists believed that couples perceive hearing aids to be the only management solution (Meyer et al., 2015). However, in this study communication partners reported that they were aware of other management options, such as assistive devices and communication strategies. Lack of awareness of a range of management options did not appear to be a barrier

for the communication partners. Communication partners perceived different barriers relating to management options. Communication partners indicated that they believed that a barrier was that there were limitations to what audiological rehabilitation strategies could deliver to improve hearing. Although communication partners acknowledged that available management options were in some respects a facilitator, hearing aids, assistive devices, and communication strategies each had limitations that were a barrier to communication partner participation in rehabilitation.

Meyer et al. (2015) found that time barriers, including scheduling difficulties, prevented greater family member involvement. This study suggests that work commitments are part of the problem but some communication partners also acknowledged that they could have arranged time off work if they had asked. This study indicates that the issue is more complicated than simply time barriers. Communication partners' time is limited but they are still, perhaps on some level, making a decision not to attend audiology appointments. For those communication partners who did decide to attend audiology appointments, it is important to consider their role within the appointment.

4.2.2 Communication partner role in hearing care appointments.

Communication partner perceptions in this study reinforce the findings of Ekberg et al. (2015) that the role of the communication partners in audiology appointments is minimal. The findings of this study indicate that communication partners perceive that audiologists do not actively encourage them to attend or actively participate in appointments. Both studies suggest that communication partner roles in audiology appointments are limited. This study indicates that this restricted role may, at least in part, be due to communication partners' perception that audiologists do not actively encourage them to participate in audiology appointments.

4.2.3 Communication partners providing practical support.

Research has indicated that audiologists appear to discuss practical matters at hearing aid fittings, but do not cover social and emotional support (Barker et al., 2016). This study suggests that providing practical support to the partner with hearing impairment is also a focus for the communication partner. There is no evidence of a causal relationship between audiologists' behaviour and communication partners' actions, but it is interesting that both parties focus on practical matters. Although further research would be required, it is at least possible that audiologists focusing more on social and emotional issues in audiology appointments may influence communication partners to focus more on those issues. Demonstrating or modelling an action has been confirmed as a technique to facilitate the development of social behaviour (Cooper, Heron, & Heward, 2007). It is possible that audiologists modelling behaviour in audiology appointments may be effective in encouraging communication partners to adopt similar behaviours. In addition to considering the role of communication partners in rehabilitation, it is also essential to contemplate the role of others who play an important part in the life of the person with hearing impairment.

4.2.4 Role of others who play an important part in the life of the person with hearing impairment.

To date, research has indicated that the strongest influence on the partner with hearing impairment is the relationship with the spouse but other family members (particularly daughters) also prompted people with hearing impairment to seek help (Carson, 2005). This study suggests that acknowledgement of the hearing impairment and help-seeking behaviour is encouraged by others close to the person with hearing impairment. Family members, close friends, and employers shared their opinions directly with the person with hearing impairment or with the communication partner who relayed them to her partner.

This study extends knowledge in the field as others close to the person with hearing impairment not only influence them directly, but also indirectly through the communication partner. The intimate partner plays a key role in influencing the person with hearing impairment, but others close to the couple sway the intimate partner who then persuades the person with hearing impairment. People with hearing impairment may have many (or few) communication partners who play an influencing role in their lives. The likely individual variation in the social networks of people with hearing impairment tends to reinforce the need for a patient-centred approach to rehabilitation.

4.2.5 Patient- and family-centred care.

The individual variation in communication partner experience in this study supports the need for a patient-centred care approach. Grenness et al. (2014a) found that the overarching theme of patient-centred care is the audiologist providing individualised care to the person with hearing impairment. These researchers proposed that patients believed that they were individuals and expected an audiologist to adapt to meet their personal requirements. As a result, it may be beneficial for audiologists to consider the differing needs of people with hearing impairment and their communication partners to determine the degree to which a family-centred care approach is appropriate. It is possible that different levels of family-centred care may suit different couples.

Patient- and family-centred care approaches are consistent with the ICF in the sense that they acknowledge the personal and psycho-social components of hearing impairment. The ICF recognises the concept of third-party disability and has been shown to be a useful framework to explain the effects of hearing impairment on communication partners (Scarinci et al., 2009b). Accordingly, it is appropriate to consider the results of this study in relation to the ICF.

4.3 Results in Relation to ICF

The ICF includes environmental factors that might increase or decrease the level of disability experienced by a person with hearing impairment or third-party disability experienced by a communication partner. This study illustrates that some of the environmental factors that play a role in the level of third-party disability of communication partners also act as facilitators and barriers to their involvement in rehabilitation. For example, Scarinci et al. (2009b) found that lack of support from the spouse with hearing impairment was an environmental factor affecting the level of third-party disability and this study suggests that it is also a barrier to communication partner participation in audiological rehabilitation.

Another example relates to hearing professionals' attitudes. Hearing professionals' attitudes have been shown to be a barrier affecting the level of third-party disability (Scarinci et al., 2009b). This study reveals that hearing professionals' attitudes of not actively encouraging communication partner involvement are also a barrier to communication partners becoming involved in audiological rehabilitation. It is perhaps unsurprising that environmental factors are the area of overlap between this study and the ICF because this study focuses on couples so the themes identified tend to relate to the social environment in which the people with hearing impairment and their communication partners live.

4.4 Limitations

A thorough research process was followed, but this study has some limitations. My inclusion criteria for the partner with hearing impairment only focused on the degree of hearing impairment. This particular inclusion criterion was effective because it resulted in males with significant hearing impairment being selected. The disadvantage of this approach was that it may have limited my sample size. More couples may have been able to be included if my inclusion criteria were any degree of hearing impairment together with a cut-

off score on a subjective measure of hearing handicap. However, the timeframe available for data collection in this study meant that an inclusion criterion of degree of hearing impairment alone was the most practical option.

If I had included a lesser degree of hearing impairment, I could have investigated whether the facilitators and barriers varied with the degree of hearing impairment. Broader inclusion criteria would have enabled the findings of this study to be generalised to a larger population as all degrees of hearing impairment would have been included in the sample.

Another limitation was that I conducted only one interview with each communication partner. A study that followed communication partners through the rehabilitation process may have uncovered different themes because the engagement with communication partners would have been over a longer time period. Prolonged engagement also helps to reduce the chance of bias, including participants not telling the truth or holding back information (Liamputtong, 2013; Padgett, 2008). More familiarity with participants can introduce greater risk of researcher bias, but the advantages tend to outweigh the challenges (Padgett, 2008).

There was some risk of bias in my sample due to the way that participants were recruited. First, the sample was recruited exclusively from Canterbury, New Zealand. As participants came from a limited geographical area, there is a risk that the sample was not representative of the wider world population. Second, some participants were recruited from Christchurch Hearing Association and Life Unlimited (which are hearing-related organisations). These participants may have been more aware of alternative rehabilitation strategies, such as communication strategies and assistive devices, than the general population. Greater awareness of alternative rehabilitation strategies may have led the participants to raise facilitators and barriers related to these issues more than the general population would have done. However, Kelly-Campbell and Lessoway (2015) found that there is overlap between the populations of adults who use hearing aids and adults who use

assistive devices so this may be a feature of the general hearing aid user population in New Zealand. The overlap found in the study by Kelly-Campbell and Lessoway (2015) does not necessarily generalise to the general population because one of the limitations of the study was that the participants were not representative of the New Zealand population in terms of income, education, sex ratio, and ancestry.

Another limitation of this study is that social desirability bias may have affected communication partner responses to member checking. Social desirability bias is the tendency of survey respondents to underreport socially undesirable actions and overreport socially desirable actions (Chung & Monroe, 2003; Krumpal, 2013). It is often viewed as a response bias that can compromise the validity of research (Furr, 2010). Respondents are concerned that violating social norms will cause humiliation or result in social sanctions if the delicate information becomes publicly known (Krumpal, 2013). Studies have consistently found that females have higher social desirability bias scores than males (Chung & Monroe, 2003; Cohen, Pant, & Sharp, 1998, 2001). Recent research has suggested that this may be due, at least in part, to the same behaviours having different levels of social desirability when applied to men as opposed to women (Paunonen, 2016).

During the interviews, communication partners revealed a wide range of barriers and facilitators and this is evidenced by their direct quotations included in this thesis. However, when it came to responding during member checking, an element of socially desirable responding may have occurred. Items that did not contain socially sensitive issues showed very good agreement between facilitators and barriers coded from the interview transcripts and member checking results. Such facilitators and barriers included ‘influence of others who play an important part in the life of the partner with hearing impairment’, and ‘limitations of assistive devices’. Items where the behaviour could be viewed as socially approved were reported more in member checking than in the interviews. For example, ‘partnership’ was

raised by three communication partners in the interviews, but seven communication partners in member checking. Another example is ‘communication partner motivation to help’, which was mentioned by three communication partners in the interviews and eight communication partners in member checking. Barriers where the behaviour could have been viewed as less socially desirable were reported more frequently in the interviews than in member checking. Examples of these barriers were ‘relationship dynamics’, ‘partners placing a high value on independence’ and ‘hearing impairment creates a non-win situation’. Socially desirable responding may, at least partially, explain the moderate level of responses raised only in member checking. The rate of false positive responses was higher for barriers than facilitators. The difference in false positive rates is consistent with social desirability response bias operating because barriers may be more likely to be considered socially undesirable than facilitators.

There are some ways to reduce the risk of social desirability bias, including carefully wording questions, ensuring anonymity, providing confidentiality assurances, using techniques such as the bogus pipeline procedure, and emphasising to participants the scientific nature of the research (Krumpal, 2013; Neuberger, 2016). I attempted to mitigate the risk of social desirability bias in this study by including confidentiality assurances in the information sheet and consent form provided to participants. I also carefully worded my member checking responses to avoid negative statements (where possible). However, tactful wording was only possible to a limited extent without altering the sentiment that communication partners had expressed in the interviews. As the communication partners had participated in interviews, there was no anonymity. I tried to build rapport and create a welcoming environment in the interviews, which was aimed at obtaining open responses from the communication partners. However, this rapport may have increased the risk of socially desirable responding in member checking.

The structure of member checking may have made it more open to social desirability bias than interview responses. In the interviews, the questions were open-ended and communication partners were free to speak their minds. In member checking, communication partners were presented with a finite set of statements (some of which could have been perceived as more socially desirable than others) and asked whether the facilitators and barriers were relevant for them or not relevant for them.

A feature of the communication partners who were involved in this study may have also made the chance of socially desirable responding higher. The communication partners were all female so, according to the findings of past research (Chung & Monroe, 2003; Cohen et al., 1998, 2001), there may have been a risk that the bias was present to a greater extent. Although this study had some limitations, it has still produced clinically relevant findings and generated some potential future research opportunities.

4.5 Future Research

There are opportunities for further research involving communication partners. Participants in this study are likely to have accessed hearing aids and related audiological rehabilitation services primarily through private clinics because Canterbury District Health Board does not offer an adult hearing aid fitting service. It would be interesting to complete a comparable study on patients accessing services through the public sector in other District Health Boards in New Zealand that offer an adult hearing aid fitting service to determine whether the facilitators and barriers are the same or different in the public sector. A study could also be performed with nonhelp-seeking couples to determine whether the facilitators and barriers are similar or different to those affecting communication partners whose partner with hearing impairment has sought help. A study could also be conducted with male communication partners of females with hearing impairment to see if the experience is similar or different across gender. It would also be useful to complete a study on a sample of

couples where the partner with hearing impairment is a cochlear implant recipient. The comments of one communication partner in this study indicated a possible difference in communication partner experience when the partner with hearing impairment has cochlear implants as opposed to wearing hearing aids and it would be interesting to explore this further.

There would also be value in investigating in depth whether increased communication partner involvement in rehabilitation increases hearing aid uptake. Given that greater communication partner participation in hearing rehabilitation could be valuable for some couples, it would be worth studying the efficacy of the models and tools developed by various researchers to assist with encouraging communication partner involvement in rehabilitation. These models may provide a framework to facilitate greater communication partner participation in audiological rehabilitation. There is a need for further research but the findings of this study still have clinical implications.

4.6 Clinical Implications

The findings of this study have clinical relevance. This study suggests that it would be preferable if audiologists actively invite communication partners to attend appointments and, if they wish to attend, actively involve them in the appointment. Tye-Murray (2016b) commented that interaction with a hearing professional was something that many patients desired the most. The need for active encouragement is also corroborated by comments made by Ekberg et al. (2015) that family members sometimes appeared to be unsure of their role in audiology appointments and whether their contributions were valued by the audiologist. Communication partners may need some reassurance to feel at ease actively contributing in audiology appointments. Clinicians may find the “Top 3” recommendations to deliver family-centred care made by Singh et al. (2016) a useful starting point. The recommendations were: (a) openly encourage communication partners to attend appointments and explain why

attendance is important, (b) ensuring that the room is set up so that the communication partner is part of the conversation rather than seated at the back of the room, and (c) beginning the appointment by saying that input will be sought from both the patient and the communication partner.

Variability in relationship dynamics suggests that an individualised approach to the appropriate level of communication partner involvement is important. In some instances, a high level of communication partner involvement may be appropriate whereas other couples may prefer a lower level of communication partner involvement. It may be beneficial for audiologists to assess the needs of patients and their communication partners in initial audiology appointments. Audiologists can then work with couples to determine the levels of ongoing communication partner participation that suits them. It may be helpful if audiologists are initially encouraging of communication partner involvement, so everyone feels welcome from the outset, but then allow couples the opportunity to make choices about ongoing levels of participation.

The individual variation in communication partner experiences indicates that there is no universal approach to the role of communication partners in audiological rehabilitation. Audiologists may need to assess the relationship dynamics within couples to best guide their management suggestions. Interactions with couples and families can be a difficult area for audiologists to navigate. It may be advantageous for audiologists to have a strong understanding of the psycho-social effects of hearing impairment and family dynamics. Audiologists might also find it beneficial to be prepared for challenging conversations as there can be disagreement between the patient and communication partners about the severity and impact of the hearing impairment (English et al., 2016). Saunders, Preminger, and Scarinci (2017) suggested that when partners have different perceptions of hearing aid outcomes this creates an opportunity for discussion and a chance to develop a shared understanding of

communication in the relationship. Skills such as self-awareness and expecting imperfection and vulnerability can assist professionals to manage difficult conversations (Browning, Meyer, Truog, & Solomon, 2007). In my view, these are skills that can be learnt and developed over time. The evidence supports teaching audiologists counselling skills as English and Archbold (2014) found that a six-week audiological counselling programme was effective in assisting audiologists to alter their counselling in practice. To assist audiologists to provide patient- and family-centred care, greater emphasis could be given to the role of communication partners in the training of audiologists at universities and in ongoing professional development in a clinical setting.

This study suggests that it may be helpful if audiologists provide specific instructions to communication partners rather than generalised information. Specific information about hearing aids, communication strategies, and assistive devices is useful to communication partners as it gives them strategies that they can implement. The findings of this study also indicate that it might be beneficial for audiologists to promote the use of rehabilitation strategies (including assistive devices and communication strategies) but also openly acknowledging that these approaches have limitations. Creating realistic expectations for patients is likely to enhance their chances of success with these strategies.

Communication partners perceiving inexperience with hearing impairment and hearing aids as a barrier and the influence of people other than the communication partner in the life of the couple suggests that it is important to raise community awareness about hearing impairment. Family members, close friends, and employers can all positively influence hearing rehabilitation and so it is important that their input is based on accurate information. Conversely, interacting with acquaintances and people who are unknown to the couple can be a barrier to communication partner involvement in audiological rehabilitation so more public awareness may assist to reduce or remove that barrier. Audiologists can play a key part in

raising public awareness through providing education programmes in their local communities and supporting hearing-related not-for-profit organisations that have effective public awareness programmes.

4.7 Summary

This study provides insights into the facilitators and barriers to communication partner involvement in audiological rehabilitation. There was a diverse range of facilitators and barriers identified by the communication partners. There were common facilitators and barriers but, at the same time, each couple's experience was unique. This study suggests that audiologists openly encouraging communication partner involvement early in audiological rehabilitation is vital but it is equally important to respect each couple's relationship dynamics and adjust management programmes to suit the couple. This study has produced findings that are both clinically relevant and significant for researchers who are interested in developing a deeper understanding of the role of communication partners in audiological rehabilitation.

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Appendix A: Reprint permission request for Figure 2



Appendix B: Reprint permission request for Figure 3

Our Ref: MD/IHBC/P8096

12th July 2016

Dear Jo Ritchie,

Figure 3 ‘Models to represent communication partners within the social networks of people with hearing impairment’ By Manchaiah, V. K. C and Stephens D. *Audiological Medicine* Vol.9 (2011) pp.103-109

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Appendix C: University of Canterbury Human Ethics Committee Approval



HUMAN ETHICS COMMITTEE

Secretary, Rebecca Robinson
Telephone: +64 03 364 2987, Extn 45588
Email: human-ethics@canterbury.ac.nz

Ref: HEC 2016/20

6 May 2016

Jo Ritchie
Communication Disorders
UNIVERSITY OF CANTERBURY

Dear Jo

The Human Ethics Committee advises that your research proposal “Barriers and Facilitators to Communication Partner Involvement in the Audiological Rehabilitation of a Partner with Hearing Impairment” has been considered and approved.

Please note that this approval is subject to the incorporation of the amendments you have provided in your email of 5th May 2016

Best wishes for your project.

Yours sincerely

pp. R. Robinson

Jane Maidment
Chair
University of Canterbury Human Ethics Committee

Appendix D: Letter from Ngāi Tahu Consultation and Engagement Group

**Ngāi Tahu Consultation and
Engagement Group**



Feb 25th, 2016

Tēnā koe, Jo

Re: Barriers and facilitators to communication partner involvement in the
audiological rehabilitation of a partner with hearing impairment

This letter is written on behalf of the Ngāi Tahu Consultation and Engagement Group. We have read and considered your proposal and agree that there are potential benefits for iwi-Māori. Hearing loss is more prevalent among Māori and so research that results in advances in treatment is welcome, particularly findings that will help whānau to be more actively and comfortably involved in rehabilitation. Where Māori are participants in your study we are sure that you will provide manaakitanga and seek cultural advice where needed.

Thank you for engaging with the Māori consultation process. This will strengthen your research proposal, support the University's Strategy for Māori Development, and increase the likelihood of success with external funding applications. It will also increase the likelihood that the outcomes of your research will be of benefit to Māori communities. We wish you all the best with your current project and look forward to

hearing about future research plans.

The Ngāi Tahu Consultation and Engagement Group would appreciate a summary of your findings on completion of the current project. Please feel free to contact me if you have any questions.

Nāku noa, nā

A handwritten signature in cursive script, reading 'Tracy Rohan'.

Dr Tracy Rohan

Research Consultant Māori

Research and Innovation

Room 244, Level 2, Psychology Building

ext 45520

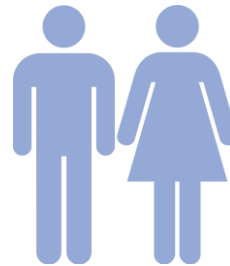
Email: tracy.rohan@canterbury.ac.nz

Office Hours: Wednesdays 12.30- 5.00 pm, Thursdays and Fridays 8.00am to 4.30 pm

ARE YOU A COUPLE AFFECTED BY HEARING LOSS?



WE NEED YOUR
HELP!



Contact us for more information.

- Couples who have been in a relationship for at least the past 5 years and living together for at least the last year
- Male partners aged 60-80 years who have a hearing loss and own hearing aids
- Female partners aged 60-80 years who have normal or near normal hearing and are fluent in written and spoken English

[illegible]

Appendix F: Information sheet



Research Information Sheet

Study Title: Barriers and facilitators to communication partner involvement in the audiological rehabilitation of a partner with hearing impairment

Researchers:

Jo Ritchie
Master of Audiology Student
Email: jo.ritchie@pg.canterbury.ac.nz

Dr Rebecca Kelly-Campbell
Research supervisor
Email: rebecca.kelly@canterbury.ac.nz

Dept of Communication Disorders
University of Canterbury
Phone: (03) 343 9639

Why am I invited to be in this study?

You are invited to take part in the study: *Barriers and facilitators to communication partner involvement in the audiological rehabilitation of a partner with hearing impairment*. We've invited you to participate in this study because we believe that you will provide information which will assist in increasing our understanding of the things that encourage or discourage partner involvement in the hearing rehabilitation of a partner with hearing loss.

What is the aim of the study?

We want to increase our understanding of the barriers and facilitators to communication partners becoming more involved in their partner's hearing rehabilitation. The aim is to provide information that can be used by hearing professionals in the treatment of people with hearing impairment and their families.

Who do we need for the study?

We need men aged 60-80 years who have a permanent hearing loss and own hearing aids and their female partners aged 60-80 years (who must have normal or near normal hearing). Couples must have been in their relationship for at least the past 5 years and living together for at least the last year. It is also important that you are able to travel to the University of Canterbury and that the female partner can converse in English and read English fluently.

What will happen in the study?

If you have a hearing impairment, you will be asked to give your consent for the researchers to access the results of your previous hearing tests. If you are the partner of a person with hearing impairment, you will be asked to participate in a hearing check at no charge. The hearing check will take about 15 minutes. The hearing check will be administered by one of the researchers at the University of Canterbury Speech and Hearing Clinic. You will be asked to press a button every time you hear a beep through a pair of headphones. The beeps are used to find the quietest sounds you can hear at different pitches. You will get the result of the hearing check in person immediately following the test.

If you are the partner of a person with hearing impairment, you may then be asked to participate in an interview about the barriers and facilitators to you becoming involved in your partner's hearing rehabilitation. Once all the interviews for the project are complete, female partners will be sent a summary of the themes that have arisen from all interviews and asked to identify the aspects that resonate with them and the aspects which do not resonate with them.

Each couple who meet the hearing status inclusion criteria and have the female partner complete the interview will receive a \$40 petrol voucher for participating in the study. Other participants will not receive this inducement.

What are your rights?

You do not have to take part in the study – it is entirely up to you. You can withdraw from the study at any time prior to 1 September 2016, without giving a reason. This will NOT affect any future interactions you have with the University of Canterbury. If you do withdraw, we will remove all information relating to you. After 1 September 2016, the information you provided will be added to the dataset and cannot be removed.

What are the benefits of the study?

There are no direct benefits to you. But, we hope this study will help us provide better information to hearing professionals who are providing support to people with hearing loss and their families.

What are the risks of the study?

There are no direct risks for you being in this study. However, you may feel distressed if you are discussing your partner's hearing loss or an unexpected level of hearing loss is identified during the hearing check. You will find a list of support services at the bottom of this letter.

Will your information stay private?

The results of the study may be published, but your identity will be kept private throughout the study. Information you give us will not be anonymous, but no information that could identify you will be used in any reports in the study. Only the researchers listed at the top of this letter will see any information we collect.

We will keep the data in a locked filing cabinet and in a password-protected computer. Consent forms, release of information forms and coding forms will contain your name and other identifying information. In all other materials, names will be replaced with identification numbers to maintain confidentiality. Consent forms, release of information forms and coding forms will be stored in a separate file from other materials (including interview transcripts). We will destroy the data five years after we finish the study. This study is part of Jo's Master of Audiology thesis. A thesis is a public document and will be available through the UC Library.

How do you find out about the study findings?

Please tick the box on the consent form if you want to know the study results.

Has this study been approved?

The study has been checked and approved by the University of Canterbury Human Ethics Committee. If you have a problem or complaint about this research, contact: The Chair,

Human Ethics Committee, University of Canterbury, Private Bag 4800, Christchurch
(humanethics@canterbury.ac.nz (03) 364 2987 ext 45588).

What do you do next?

If you agree to take part in this study, please contact Jo Ritchie:

Email: jo.ritchie@pg.canterbury.ac.nz

Phone: +64 3 343 9639

Thank you for taking time to read about this study.

Who can you contact if you feel distressed?

Lifeline: 0800 543 354

Who can you contact if you want more information about hearing loss?

New Zealand Audiological Society: 0800 625 166

Ministry of Health Healthline: 0800 611 116

Ministry of Health Disability Support: 0800 373 664

Appendix G: Consent to participate form



CONSENT FORM

Study title: *Barriers and facilitators to communication partner involvement in the audiological rehabilitation of a partner with hearing impairment*

The information about this research study has been explained to me to my satisfaction. I have had the chance to ask questions. I know what I need to do to take part in the study.

I know that I can choose whether or not I take part in this research.

I know that I may withdraw from the study at any time prior to 1 September 2016, without giving a reason. I know that I can withdraw by sending an email stating that I wish to withdraw from the research to one or both of the researchers. If I withdraw, my information will also be withdrawn.

I know that, if I take part in an interview, an audio-recording will be made of that interview and the researchers will own this recording. All data collected for the study (including any audiometric data and audio-recording) will be kept in password protected computers and will be destroyed after 5 years. Consent forms, release of information forms and coding forms will contain my name and other identifying information. In all other materials, names will be replaced with identification numbers to maintain confidentiality. Consent forms, release of information forms and coding forms will be stored in a separate file from other materials (including interview transcripts).

I know that if I take part in an interview, I can request a copy of the transcript of my interview by ticking the box below. If there are any aspects of the transcript that I wish to revise I can contact the researchers with my revisions prior to 1 September 2016.

I will be given a copy of this form and the Research Information Sheet (and if I am a participant with hearing impairment a copy of the release of information form). I know that I can contact the researchers for more information. They are Jo Ritchie: jo.ritchie@pg.canterbury.ac.nz and Dr Rebecca Kelly-Campbell: rebecca.kelly@canterbury.ac.nz.

If I have any complaints, I can contact the Chair of the University of Canterbury Human Ethics Committee, Private Bag 4800, Christchurch (human-ethics@canterbury.ac.nz, (03) 364 2987 ext 45588).

Consents:

I would like a copy of the final results of the study.

Yes ☐ No ☐

I would like a copy of the transcript of my interview (interview participants only).

Yes ☐ No ☐

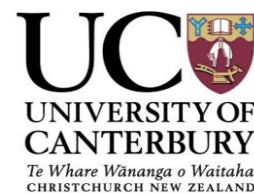
By signing below, I agree to take part in this research project.

Name (please print): _____

Signature: _____ Date: _____

Appendix H: Consent form agreeing to release of audiological file

RELEASE OF INFORMATION



I (name) _____

Address _____

Date of birth _____

Authorise _____
(hearing clinic) _____

**to release records pertaining to my hearing/hearing aids to Jo Ritchie, Master of
Audiology Student, Department of Communication Disorders, University of
Canterbury
Private Bag 4800, Christchurch, 8140 or jo.ritchie@pg.canterbury.ac.nz as soon as
possible please.**

Thank you.

Signature _____

Date _____

Appendix I: Interview guide

Background information

1. Tell me about your journey through your partner's hearing loss.
2. Tell me about the impact that it has had on you over the years.
3. How was your partner's hearing loss confirmed?
4. How did you feel about the confirmation of your partner's hearing loss?
5. What prompted your partner to do something about his hearing difficulties?
6. When did your partner get hearing aids?
7. Are there any steps which your partner has taken to help manage his hearing loss (other than getting hearing aids)?
8. Are there any steps that you think your partner could have taken to manage his hearing loss but has not taken? If so, why do you think that these steps were not taken?
9. What knowledge do you have about hearing impairment? Where did this knowledge come from?
10. What knowledge do you have about hearing aids? Where did this knowledge come from?

Questions specifically targeted at determining facilitators and barriers for significant others

11. Do you want to be part of the process to improve your partner's hearing? Why or why not?
12. What does being involved in the process to improve your partner's hearing mean to you?
13. Has anyone or anything facilitated you to become involved in improving your partner's hearing ability? If so, what?
If more prompting is needed: Has anything or anyone helped or encouraged you to become involved in improving your partner's hearing ability? If so, what?
14. Do you want to be **more** involved in improving your partner's hearing ability? If so, how? What would help or encourage you to be more involved?
15. Has anything or anyone been a barrier to you being more involved in improving your partner's hearing ability? If so, what?
If more prompting is needed: Has anything or anyone discouraged or prevented you from being involved in improving your partner's hearing ability? If so, what?

General questions

16. Is there anything else that you would like to tell me?
17. Do you have any questions about this research project?

Appendix J: Member checking table

Facilitators and barriers to communication partner involvement in rehabilitation of their partner with hearing impairment

Instructions: Please read the facilitator and its description and then decide whether it is relevant or not relevant for you. Please indicate your selection by putting a tick either in the “relevant for me” or “not relevant for me” box in each row.

Facilitators			
Facilitator	Description	Relevant for me	Not relevant for me
Influence of others who play an important part in the life of my partner	Other family members, close friends <i>or</i> employers have had an influence over my partner. These people often had similar views to me about the severity of his hearing impairment and the need for him to seek help. They shared these opinions directly with my partner; or with me and I relayed them to my partner. Their opinions influenced my partner.		
Interactions with hearing professionals	My interactions with hearing professionals helped me to understand my partner’s hearing impairment and improve our communication.		
Attending audiology appointments	Attending audiology appointments enabled me to understand more about my partner’s hearing impairment.		
Hearing professionals providing me with specific instructions	Hearing professionals providing me with specific instructions helped me to work with my partner to improve our communication.		
My willingness to be involved	I am willing to assist my partner to manage his hearing impairment.		
Personal motivation to help my partner	I am motivated to help my partner improve his hearing.		
Providing practical support to my partner	<p>One of the ways that I am involved in my partner’s hearing rehabilitation is by providing practical support to him. Practical support includes things like:</p> <ul style="list-style-type: none"> • attending medical appointments with him so that he does not miss what is said; 		

	<ul style="list-style-type: none"> • bringing him his hearing aids when he forgets them; • reminding him to clean his hearing aids or take batteries with him when we go on holiday; • asking him about the best place for him to sit in a restaurant; and • suggesting that he gets his ears checked for wax if the hearing aids are whistling. <p><i>Note: Please tick relevant for me if any one of the above applies.</i></p>		
Receiving support from my partner	My partner is supportive of my involvement in his hearing rehabilitation.		
Rehabilitation strategies	My partner and I have some strategies to help to manage the impact of his hearing impairment.		
Assistive devices – which include things like TV streamers, headphones, remote microphones (pens), loop systems and amplified telephones	Assistive devices have helped my partner and I reduce the impacts of his hearing impairment on us as a couple.		
Communication strategies - which include things like looking at my partner, getting his attention before speaking and speaking clearly	Communication strategies have sometimes helped me communicate more effectively with my partner.		
Partnership	Working together in partnership or as a team has helped me to be part of the process of improving communication in our relationship.		

Instructions: Please read the barrier and its description and then decide whether it is relevant or not relevant for you. Please indicate your selection by putting a tick either in the “relevant for me” or “not relevant for me” box in each row.

Barriers			
Barrier	Description	Relevant for me	Not relevant for me
Challenges arising from interactions with acquaintances and people who are unknown to us as a couple	Interactions with acquaintances and people who are unknown to us as a couple can be challenging due to their lack of awareness of hearing impairment.		
Lack of interactions with hearing professionals	I did not have much opportunity to interact with hearing professionals and seek their advice.		
There is no benefit in me attending audiology appointments	There are times when I have not attended audiology appointments because I have thought that attending would not make any difference.		
Audiologists not actively encouraging my involvement	Audiologists did not actively encourage me to attend or actively participate in appointments and it would have been preferable if this had occurred.		
My Partner	At times, my partner can be a barrier to my involvement in his hearing rehabilitation.		
Concern about the impact of my own challenges on my partner	I am concerned about my own challenges, disability or limitations having an impact on my partner and view this as a more significant issue than his hearing impairment.		
Limitations of rehabilitation strategies	The strategies to manage the impact of hearing impairment (such as hearing aids, assistive devices and communication strategies) sometimes help but they have their own challenges.		

Limitations of assistive devices Note: Assistive devices include things like TV streamers, headphones, remote microphones (pens), loop systems and amplified telephones	Sometimes my partner and I encounter problems with assistive devices so they do not provide as much support to us as we would like.		
Practical limitations of communication strategies Note: Communication strategies include things like looking at my partner, getting his attention before speaking and speaking clearly	It is not always practical to use communication strategies as in daily life we are often in different rooms or moving around.		
My partner choosing to limit hearing aid use	There have been times when my partner has chosen not to wear his hearing aids and this restricts our ability to communicate.		
Practical limitations of hearing aids	My partner cannot wear his hearing aids when his ears are sore or overnight and this restricts our ability to communicate.		
Inexperience with hearing impairment and hearing aids	Prior to meeting my partner, I did not have much experience with hearing impairment or hearing aids.		
Gradual nature of hearing impairment	As hearing impairment occurs gradually, my partner took some time to acknowledge the extent of his hearing impairment and seek help.		
Relationship dynamics	Sometimes the dynamics of our relationship as a whole prevent me from becoming more involved in my partner's hearing rehabilitation.		
Me or my partner placing a high value on independence	My partner is independent and it is preferable that he looks after his hearing health independently.		
Hearing impairment creates a nonwin situation.	My partner sometimes resists my attempts to become involved with his hearing and this can cause conflict in our relationship.		
Work commitments	Work commitments made it difficult for me to attend audiology appointments.		